AUTO-ID Products

DENSO
DENSO WAVE

CREATE YOUR NEW WORKSTYLE

Creating new work methods together

In this age of the "new normal",
where change seems like the only true constant,
what can DENSO WAVE do?

We believe we can provide new value and fulfill our mission by proposing
new work methods through our products and services,
without being bound to conventional ideas.

DENSO WAVE provides opportunities for new work methods
through its products, support for introduction and after-sale service,
in cooperation with its customers.

Let DENSO WAVE help you find a new work methods to help
both on-site workers and managers perform stronger and faster.

Solutions that only DENSO WAVE can offer

CREATE YOUR NEW WORKSTYLE

Creating new work methods together

DENSO WAVE's QR Code® is a common everyday sight. Devices and systems that scan QR Code and barcodes using automatic identification technology are branded AUTO-ID products. With needs and applications growing ever more diverse, we encounter QR Code in settings ranging from manufacturing plants and food plants to logistics checkpoints. Applications include procedures at stores and warehouses, hospitals, entertainment, offices, and transportation. AUTO-ID products are also used with other devices to create solutions and systems that improve productivity and safety across a wide range of daily scenarios.

In factories

For verifying components

QR Code eliminate component input errors.

In logistics

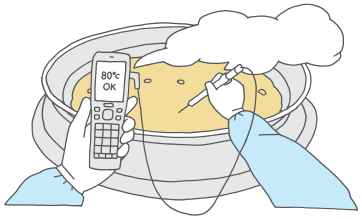
For delivery inspections

Order data is loaded into a handy terminal and matched against delivered items for reliable delivery confirmation.

In stores

For inventory taking

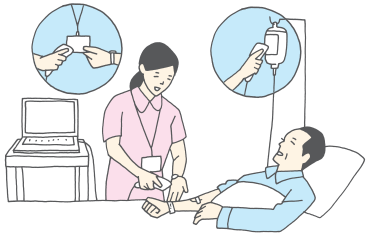
RFID high-output handy terminals can be used to scan all in-store items at once.



Hospital meals

For temperature management

Enables temperature recording via suitable terminals to reduce the work involved in providing meals.



In healthcare

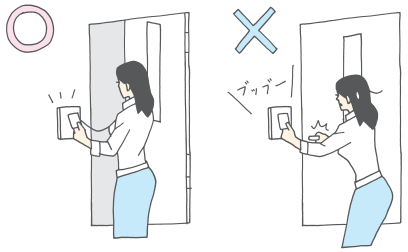
For administering medicines

Drug barcodes are scanned to prevent medical errors.

In entertainment

For controlling admissions

Facilitates admission control even at locations where gates can't be installed.



In offices

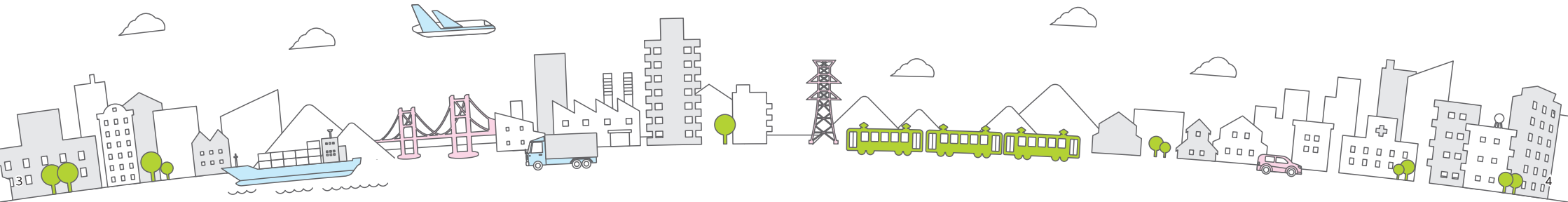
For managing office access

Systems can be used to manage access times and personnel and to restrict access.

In duty-free shops

For tax exempt procedure

When a passport is held over the scanner, character and image data are read automatically, thereby simplifying tax exempt documentation procedures.



Handheld terminal

BHT-M80 NEW

▶P.13

Equipped with Android™ 10
The large 5.0-inch screen enables various operations.

BHT-M70 NEW

▶P.15

Equipped with Android™ 10
High operability and scalability to meet on-site and operational needs.

BHT-M60 NEW

▶P.17

Equipped with Android™ 10
Operational efficiency fosterd by one-handed operation.

BHT-1800

▶P.19

Android™ 7.1.2 based light and thin 5.0-inch smart terminal

BHT-1700

▶P.21

Android™ 7.1.2 based handheld terminal with a 4.0-inch large display and hardware keys that is operable with one hand

BHT-1600

▶P.23

Robust, Large-Screen smart terminal with Android™ 6.0

		BHT-M80	BHT-M70	BHT-M60	BHT-1800	BHT-1700	BHT-1600
OS		Android™*1 10	Android™*1 10	Android™*1 10	Android™*1 7.1.2	Android™*1 7.1.2	Android™*1 6.0
Screen		**5.0 inch HD**	**4.0 inch WVGA**	**3.2 inch WVGA**	**5.0 inch HD**	**4.0 inch WVGA**	**4.7 inch HD**
Inter-face	Wireless LAN	●	●	●	●	●	●
	Bluetooth®*3	●	●	●	●	●	●
	Wireless WAN	●	●	●	●	●	●
Readable medium		1D Codes 2D Codes OCR	1D Codes 2D Codes OCR	1D Codes 2D Codes OCR	1D Codes 2D Codes	1D Codes 2D Codes	1D Codes 2D Codes
Protection rating		**IP65,67**	**IP65,67**	**IP65,67**	**IP67**	**IP67**	**IP67**

BHT-S40 NEW

▶P.25

Handle more information in one hand with a large 3.2-inch screen.

BHT-S30 NEW

▶P.27

Compact model in a pocketable size.

BHT-1500

▶P.29

Achieving both an ultra-compact body and excellent visibility

BHT-1400

▶P.31

Characterized by a large screen, robustness, and single-handed operability

BHT-1300

BHT-OS ▶P.33
Windows OS ▶P.35

Perfectly suitable for any situation

BHT-1306QWB-H

▶P.37

Temperature sensor model

		BHT-S40	BHT-S30	BHT-1500	BHT-1400	BHT-1300		BHT-1306QWB-H
OS		BHT-OS	BHT-OS	BHT-OS	Windows®*2	Windows®*2	BHT-OS	BHT-OS
Screen		**3.2 inch WVGA**	**2.4 inch QVGA**	**2.0 inch QVGA**	**3.2 inch WVGA**	**2.4 inch QVGA**		**2.4 inch QVGA**
Inter-face	Wireless LAN	●	●	—	●	●		●
	Bluetooth®*3	●	●	●	●	●		●
	Wireless WAN	—	—	—	—	—		—
Readable medium		1D Codes 2D Codes	1D Codes 2D Codes	1D Codes	1D Codes 2D Codes	1D Codes 2D Codes		1D Codes 2D Codes
Protection rating		**IP65**	**IP54**	**IP54**	**IP65**	**IP54**		**IP54**

*1 Android is a trademark of Google LLC. *2 Windows is the registered trademark of Microsoft Corporation in the U.S. and other countries.

*3 Bluetooth is the registered trademark of Bluetooth SIG, Inc.

Handy scanner

	SF1 ▶P.38	SE1 ▶P.39		GT20 ▶P.41	AT20 ▶P.43	AT30 ▶P.45
	Small and robust scanner	Pocket-size model		Robust, high-spec model	Standard model focusing on operability	2D scanners also support "touch scanning"
						
Interface: RS-232C	—	—		●	●	●
Interface: USB keyboard	—	—		●	●	●
Interface: USB COM	—	—		●	●	●
Interface: PS/2 keyboard	—	—		—	—	—
Interface: Bluetooth®	●	●		●	●	—
Interface: Ethernet	—	—		—	—	—
Readable medium	1D Codes 2D Codes	1D Codes 2D Codes		1D Codes 2D Codes	1D Codes 2D Codes	1D Codes 2D Codes
Protection rating	IP54	IPX2		IP65	IP42	IP42

Unique products

	SH1 ▶P.46	HC76 ▶P.47		QS20P ▶P.47	GT20QD ▶P.47
	A compact model that is easy to keep clean	New contact scanning model for POS		Micro QR Code contact scanning model	Designed for direct part marking on metallic workpieces
					
Interface: RS-232C	—	●		●	●
Interface: USB keyboard	●	●		●	●
Interface: USB COM	●	●		●	●
Interface: PS/2 keyboard	—	—		—	—
Interface: Bluetooth®	—	—		—	—
Interface: Ethernet	—	—		—	—
Readable medium	1D Codes 2D Codes	1D Codes		2D Codes	1D Codes 2D Codes
Protection rating	—	—		—	IP65G

1D Codes · 2D Codes

Fixed type scanner

QK30

▶P.49

High-speed scanning of mobile QR Code®

Interface	RS-232C	●
	USB keyboard	●
	USB COM	●
	PS/2 keyboard	—
	Bluetooth®	—
	Ethernet	—
Readable medium		1D Codes / 2D Codes
Protection rating		**IPX2**

QM30

▶P.50

Ultra-small 3.5 cm case dimensions incorporation into a wide range of devices

Interface	USB keyboard	●
	USB COM	●
Readable medium		1D Codes / 2D Codes
Protection rating		—

QB33

▶P.51

Compact installation and built-in model

Interface	RS-232C	●
	USB keyboard	—
	USB COM	●
	PS/2 keyboard	—
	Bluetooth®	—
	Ethernet	—
Readable medium		1D Codes / 2D Codes
Protection rating		**IP54**

FD2 NEW

▶P.52

From the smallest workpieces to long distance reading Freedom at the push of a button

RS-232C	●
USB keyboard	●
USB COM	●
PS/2 keyboard	—
Bluetooth®	—
Ethernet	●
Readable medium	1D Codes / 2D Codes
Protection rating	**IP65**

1D Codes · 2D Codes

Wearable scanner

Wearable SF1

▶P.54

Tough and clean wearable scanner

RS-232C	—
USB keyboard	—
USB COM	—
PS/2 keyboard	—
Bluetooth®	●
Ethernet	—
Readable medium	1D Codes / 2D Codes
Protection rating	**IP54**

RFID

Handheld terminal

BHT-615QUMWB

▶P.55

Specified low-power radio station model

OS		**BHT-OS**
Screen		**2.8 inch QVGA**
Interface	Wireless LAN	●
	Bluetooth®	●
	Wireless WAN	—
Readable medium		1D Codes / 2D Codes / RF TAG
Protection rating		**IP54**

RFID

Reader/Writer

UR50 NEW

▶P.56

A fixed type scanner of UHF RF tags ideal for factory automation and logistics (250 mW / middle-distance type)

Interface	RS-232C	●
	USB keyboard	—
	USB COM	●
	PS/2 keyboard	—
	Bluetooth®	—
	Ethernet	●
Readable medium		RF TAG
Protection rating		**IP65**

UR40 NEW

▶P.57

A fixed type scanner of UHF RF tags ideal for factory automation and logistics (1 W / long-distance type)

Interface	RS-232C	●
	USB keyboard	—
	USB COM	●
	PS/2 keyboard	—
	Bluetooth®	—
	Ethernet	●
Readable medium		RF TAG
Protection rating		**IP65**

UR20

▶P.58

Ultra-thin stationary scanner that can be installed anywhere

Interface	RS-232C	●*1
	USB keyboard	—
	USB COM	●*2
	PS/2 keyboard	—
	Bluetooth®	—
	Ethernet	●*3
Readable medium		RF TAG
Protection rating		—

SP1

▶P.59

High-speed reading, RF tag reading distance*4 Approx. 8m
1W high-output handy scanner

RS-232C	—
USB keyboard	—
USB COM	—
PS/2 keyboard	—
Bluetooth®	●
Ethernet	—
Readable medium	1D Codes / 2D Codes / RF TAG
Protection rating	**IP54**

UR30

▶P.61

Portable and stationary RFID

RS-232C	—
USB keyboard	—
USB COM	—
PS/2 keyboard	—
Bluetooth®	●
Ethernet	—
Readable medium	RF TAG
Protection rating	**IP55**

SE1-BUB-C

▶P.62

Pocket RFID

RS-232C	—
USB keyboard	—
USB COM	—
PS/2 keyboard	—
Bluetooth®	●
Ethernet	—
Readable medium	1D Codes / RF TAG
Protection rating	**IPX2**

*1 The line up of only UR20/UR21. *2 The line up of only UR21/UR22. *3 The line up of only UR22.

*4 Settings restrictions may apply for cer tain countries and functions. The scan distance shown is a reference value and it may vary accordingly, depending on the actual environmental conditions. Evaluation condition = Avery Dennison AD-229r6

RFID

TAG

E-paper tag NEW

▶P.63

Combining the RFID's feature which automates read/write with visibility of paper label.

Navigation TAG® NEW

▶P.64

LED-equipped UHF-band RF tag Lights up what you're looking for

Band	UHF	UHF
Protection rating	**IP54**	**Equivalent to IP53**

IC card

Reader/Writer

QK30-IC

▶P.65

IC cards + mobile QR Code®

Inter-face	RS-232C	—
	USB keyboard	●
	USB COM	●
	PS/2 keyboard	—
	Bluetooth®	—
	Ethernet	—
Readable medium		1D Codes / 2D Codes / IC CARD
Protection rating		**IPX2**

OCR

Handheld terminal

OCR-capable hand-held terminal

▶P.66

Smooth scanning of diverse range of characters

BHT-M80 BHT-M70 BHT-M60

OS	Android 10
Readable medium	1D Codes / 2D Codes / OCR
Protection rating	**IP65,67**

OCR

Fixed type scanner

FC1

▶P.66

Quick scanning of passport information and images

QK30-OP-U

▶P.67

Instantaneous scanning of passports

		FC1	QK30-OP-U
Inter-face	RS-232C	—	—
	USB keyboard	●	●
	USB COM	●	●
	PS/2 keyboard	—	—
	Bluetooth®	—	—
	Ethernet	—	—
Readable medium		1D Codes / 2D Codes / OCR	1D Codes / 2D Codes / OCR
Protection rating		**IPX2**	**IPX2**

DENSO WAVE's three strengths

Core technologies that are continuously refined

DENSO WAVE unveiled the BHT-1, the world's first CCD scanner-integrated handheld terminal, in 1987. In the early 1990s, we launched R&D on RFID and have, as an industry leader, introduced numerous AUTO-ID products.
Our accumulated technologies have been inspired by dedicated attention to the voice of our customers in developing new products and unwavering commitment to improving the accuracy and usability of our products.

Made-in-Japan quality

DENSO WAVE handles all product planning, development, engineering, production, and service operations in-house.
Drawing on extensive experience with automotive parts quality testing, DENSO WAVE performs repetitive tests and inspections based on rigorous standards and criteria that go well beyond the usage conditions envisioned. DENSO WAVE is proud to deliver to the world products marked by uncompromising DENSO quality.

Worldwide support service to ensure product safety and reliability

Leveraging DENSO Group's network and sales outlets located around the world, we go beyond proposing products suitable for each customer's business type to provide detail-oriented customer service, including after-sales service.
In the event that products malfunction, we're capable of providing onsite repair services.

Handheld terminal with Android™

BHT-M80 NEW

Equipped with Android™10
The large 5.0-inch screen enables various operations.

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes　2D Codes　OCR

Supported by BHT OCR(Software)

Display

5.0 **5.0 inch touch panel color LCD**

OS

Android™10

Interface

Bluetooth®/Wireless LAN 4G(LTE)

Card slot

micro SD(SDHC/SDXC),SDHC Support micro SIM,DSDV Support

Robustness

Protection Class IP 65,IP 67

Drop Resistance: Up to 3.0 m

Features

- **Smartphone-type model with a large 5.0-inch touch panel**
- **High-speed 4G/GPS + satellite navigation system supported, allowing getting the highly precise location.**
- **Resistance against 3.0-meter drops. 1m x 2,000 times fall impact resistance to withstand daily operations**
- **Equipped with a new decode engine and high-density sensor,Stress-free reading of labels covered by wrapping film and deformed labels**

[Components]

•Device •Hand strap •Operation guide

*Battery is not supplied with the product.

Product Configuration

[Device]
BHT-M80-QW
BHT-M80-QWG

+[Battery]
BT1S (2900 mAh battery)
BT1 (4020 mAh battery)
BT1L (5800 mAh battery)
BT1S-W (Wireless 2900 mAh battery)

+[Communication Unit]
CU-M80U (USB type: With a spare battery charger)
CU-M80UQ (USB type: Without a spare battery charger)*1
CU-M80L (LAN type: With a spare battery charger)

Dimensions

Options

CU-M80U CU-M80L / CU-M80UQ*1 / CH-M80W / CH-M80-4 / CH-BT1-4 / AD8*1 / WHBHT-M80*2 / HBBHT-M80 / PNBHT-1700 / CB00-US1500/4A-4C / CB00-US100/3-4C*3

Model			CU-M80U	CU-M80L	CU-M80UQ*1	CH-M80W	CH-M80-4	CH-BT1-4
Communication system			USB2.0 (High Speed conformant)	Ethernet	USB2.0 (High Speed conformant)	—	—	—
Charging time	Unit	2900mAh Battery(Wireless charger)	Approx.2 hours	Approx.2 hours	Approx.2 hours	Approx.2 hours	Approx.3 hours	—
		4020mAh Battery	Approx.3 hours	Approx.3 hours	Approx.3 hours	—	Approx.4 hours	—
		5800mAh Battery	Approx.4 hours	Approx.4 hours	Approx.4 hours	—	Approx.6 hours	—
	Battery communication charge	2900mAh Battery(Wireless charger)	Approx.3 hours	Approx.3 hours	—	—	—	Approx.3 hours
		4020mAh Battery	Approx.4 hours	Approx.4 hours	—	—	—	Approx.4 hours
		5800mAh Battery	Approx.6 hours	Approx.6 hours	—	—	—	Approx.6 hours
Dimensions			131(D)×100(W)×85(H)mm	131(D)×100(W)×85(H)mm	130(D)×109(W)×61(H)mm	126(D)×100(W)×125(H)mm	75(D)×432(W)×130(H)mm	183(D)×184(W)×53(H)mm
Power supply			AC adapter*4	AC adapter*4	AC adapter(AD8)*4*5	AC adapter*4	AC adapter*4	AC adapter*4

*1:Quick Charge™3.0 supported compatible *2:The waistpack case does not include belt. *3:You also need the conversion cable to equip the BHT terminal with earphones and other devices. *4:AC adaptor sold separately. *5:You need the USB Type-C - Type-A conversion cable(1.5m) when connecting the main unit to a USB adapter.

Software [P.69-81]

Development/kitting/operation tools
Software Development Kit for Android (SDK)
BHT Booster　BHT Link　BHT OCR

Terminal management/maintenance tool
BHT DMS　BHT Remote
BHT Security Package

Useful Software(Free-Preinstall)
BHTSetting　WlanManager　SNTPSetting
BHT Browser　BHT Booste　Battery Monitor
ApplicationLauncher　HardTest　BHT Logger

*Some software has optional features for a fee.

Specification

Model			2D Code model	
			Wireless LAN connection **BHT-M80-QW**	Wireless LAN+Wireless WAN **BHT-M80-QWG**
Operating System			Android™10	
CPU			Qualcomm® SDM660 64 bit 2.20 GHz(Octa-Core)	
Memory	RAM		4 GB	
	Flash ROM		64 GB	
Display	Screen size and resolution*1		5.0-inch high-definition (720×1,280 dots)	
	Display device		Dot matrix liquid crystal display (color)	
	Backlight		White LED	
Reader	Reading method		Area sensor	
	Supported code	2D Codes	QR code®, Micro QR code, SQRC®, PDF417, Micro PDF417, Maxi code, Data Matrix (ECC200), and GS1 Composite	
		Barcode	EAN-13/8 (JAN-13/8), UPC-A/E, UPC/EAN (with add-on), and Interleaved 2 of 5 (ITF) Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), and Standard 2 of 5 (STF), GS1 DataBar (RSS)	
		OCR*2	Supported	
	Minimum resolution	2D Codes	0.127 mm	
		Barcode	0.076 mm	
	Marker		Cross guide marker	
	Confirmation of reading		Blue LED, speaker, and vibrator	
Key Entry	Number of keys		5 keys (including the power key) and 2 trigger keys	
Touch screen			Dragontrail® Pro*3 Capacitive multi-touch screen with glove touch support and water droplet false touch prevention	
Communication	Wireless LAN	Applicable standard	Compliant with IEEE802.11a/b/g/n/ac and MU-MIMO 2x2	
		Frequency	5 GHz-band (W52, W53, W56 and W58) 2.4 GHz-band (1 to 13 channels) *USA, Canada,Taiwan(1 to 11 channels)	
		Security	Encryption:OPEN, Enhanced Open, WEP(40/128), TKIP and AES WPA authentication: WPA and WPA2 and WPA3 User authentication: PSK, EAP-TLS, and PEAP	
	Wireless WAN applicable standard		—	Supported: GSM/W-CDMA/LTE,VoLTE FDD-LTE (4G) - Bands 1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 19, 20, 25, 26, 28 W-CDMA/UMTS/HSPA/HSPA+ (3G) - Bands 1, 2, 5, 6, 8, 19 GSM/GPRS/EDGE (2G) - Bands 850, 900, 1800, 1900MHz
	GPS		—	A-GPS/GLONASS/QZSS/BeiDou/Galileo
	Bluetooth®connection		Bluetooth® Ver5.1+EDR/LE (Supported Profile: RFCOMM/A2DP/AVCTP/ACDTP/GVDP/AVRCP/DUN/DI/HFP/HID/HSP/IOP/MAP/OPP/BNEP/PAN/PBAP/SAP/SPP/HOGP/SCPP)	
	Wired connection		USB Ver.2.0(USB Type-C)	
	NFC*4		ISO/IEC14443A&B, FeliCa, ISO/IEC15693(RFID)	
Camera	Rear		13-megapixel auto-focusing with a LED light	
	Front		5-megapixel auto-focusing	
Card slot	Memory		microSD (SDHC and SDXC (up to128 GB))SDHC Speed class 4 support	
	SIM		—	Nano SIM×2,DSDV(4G×4G)
Microphone receiver			Attached*5	
Speaker			90dB or more at 10 cm away (at 2.8kHz)	
Sensor			G-sensor, gyro sensor, proximity sensor, light intensity sensor, and geomagnetic sensor	
Power Supply	Main battery		Lithium-ion battery	
	Wireless charging		Supported	
	USB charging		Compliant with Qualcomm® Quick Charge™ 3.0	
	Operating time*8	BT1S·BT1S-W(2900 mAh)	Approx. 14 hours*9	
		BT1(4020 mAh)	Approx. 20 hours*9	
		BT1L(5800 mAh)	Approx. 29 hours*9	
Environmental Performance	Operating temperature*6		-20°C to 50°C	
	Operating humidity		5 to 95%RH (non-condensing and non-icing)	
	Protective class*7		IP65 and IP67	
	Drop resistance*7		Above concrete floor, 3.0 m, 60 times or more from 1.5 m	
Weight (including the battery)			Approx. 345 g (including BT1S), approx. 365 g (including BT1), and approx. 395 g (including BT1L)	

*1: The LCD display is manufactured with precise technology.The rate of non-defective pixels is 99.99% or more, which means that 0.01% or less pixels could be stuck or dead. *2: Chargeable license is required. *3: Dragontrail® Pro is a registered trademark of AGC Inc. *4: Before using the NFC function, perform test reading sufficiently using the target NFC card. *5: A headset or headphone can be connected through the USB Type-C cable. A USB Type-C-to-audio jack (3.5 mm) conversion cable is optional. *6: 0°C to 40°C during charging. *7: These are the values tested at a room temperature, and not guaranteed values. *8: The operating time is a reference value at a room temperature and may differ depending on the operating conditions. *9: This is a result of measurement based on the JEITA HT Standard Operation Mode G, and may change depending on the operating environment and system settings.

Handheld terminal with Android™

BHT-M70 NEW

Equipped with Android™10
High operability and scalability to meet on-site and operational needs.

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes　2D Codes　OCR

Supported by BHT OCR(Software)

Display

4.0 **4.0 inch touch panel color LCD**

OS

Android™10

Interface

Bluetooth®/Wireless LAN 4G(LTE)

Card slot

micro SD(SDHC/SDXC),SDHC Support micro SIM,DSDV Support

Robustness

Protection Class IP 65,IP 67

Drop Resistance: Up to 2.5 m

Features

- **Model with Large Screen and Physical Key**
- **High-speed 4G/GPS + satellite navigation ystem supported, allowing getting the highly precise location.**
- **Resistance against 2.5-meter drops .Drop resistance of over 1.5 m x 60 times, strong enough for daily operation**
- **Equipped with a new decode engine and high-density sensor,Stress-free reading of labels covered by wrapping film and deformed labels**

[Components]

•Device •Hand strap •Operation guide

*Battery is not supplied with the product.

Product Configuration

[Device]
BHT-M70-QW
BHT-M70-QWG

+[Battery]
BT3(3050 mAh battery)

+[Communication Unit]
CU-M70U (USB type: With a spare battery charger)
CU-M70UQ (USB type: Without a spare battery charger)*1
CU-M70L (LAN type: With a spare battery charger)

Dimensions

Options

With a spare battery charger	Without a spare battery charger	4-slot main unit charger	4-slot battery charger	AC adaptor	Waist case	Stylus pen	USB Type-C - Type-A conversion cable(1.5m)	USB Type-C - Audiojack conversion cable(3.5m)
	Coming Soon	Coming Soon			Coming Soon (Planned for sale)			
CU-M70U CU-M70L	**CU-M70UQ**[*1]	**CH-M70-4**	**CH-BT1-4**	**AD8**[*1]		**PNBHT-1700**	**CB00-US1500/ 4A-4C**	**CB00-US100/ 3-4C**[*2]

Model		CU-M70U	CU-M70L	CU-M70UQ[*1]	CH-M70-4	CH-BT1-4
Communication system		USB2.0 (High Speed conformant)	Ethernet	USB2.0 (High Speed conformant)	—	—
Charging time	Unit	Approx.2 hours	Approx.2 hours	Approx.2 hours	Approx.3 hours	—
	Battery communication charge	Approx.3 hours	Approx.3 hours	—	—	Approx.3 hours
Dimensions		170(D)×105(W) ×112(H)mm	170(D)×105(W) ×112(H)mm	130(D)×109(W) ×115(H)mm	130(D)×437(W) ×129(H)mm	183(D)×184(W) ×53(H)mm
Power supply		AC adapter[*3]	AC adapter[*3]	AC adapter[*3*4]	AC adapter[*3]	AC adapter[*3]

*1:Quick Charge™3.0 supported compatible *2:You also need the conversion cable to equip the BHT terminal with earphones and other devices. *3:AC adaptor sold separately.
*4:You need the USB Type-C - Type-A conversion cable(1.5m) when connecting the main unit to a USB adapter.

Software [P.69-81]

Development/kitting/operation tools
Software Development Kit for Android (SDK)
BHT Booster　BHT Link　BHT OCR

Terminal management/maintenance tool
BHT DMS　BHT Remote
BHT Security Package

Useful Software(Free-Preinstall)
BHTSetting　WlanManager　SNTPSetting
BHT Browser　BHT Booste　Battery Monitor
ApplicationLauncher　HardTest　BHT Logger
*Some software has optional features for a fee.

Specification

Model			2D Code model	
			Wireless LAN connection **BHT-M70-QW**	Wireless LAN+Wireless WAN **BHT-M70-QWG**
Operating System			Android™10	
CPU			Qualcomm® SDM660 64 bit 2.20 GHz(Octa-Core)	
Memory	RAM		4 GB	
	Flash ROM		64 GB	
Display	Screen size and resolution[*1]		4.0-inch WVGA (480×800 dots)	
	Display device		Dot matrix liquid crystal display (color)	
	Backlight		White LED	
Reader	Reading method		Area sensor	
	Supported code	2D Codes	QR code®, Micro QR code, SQRC®, PDF417, Micro PDF417, Maxi code, Data Matrix (ECC200), and GS1 Composite	
		Barcode	EAN-13/8 (JAN-13/8), UPC-A/E, UPC/EAN (with add-on), and Interleaved 2 of 5 (ITF) Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), and Standard 2 of 5 (STF), GS1 DataBar (RSS)	
		OCR[*2]	Supported	
	Minimum resolution	2D Codes	0.127 mm	
		Barcode	0.076 mm	
	Marker		Cross guide marker	
	Confirmation of reading		Blue LED, speaker, and vibrator	
Key Entry	Number of keys		27 keys (including the power key) , cursol keys, and 3 trigger keys	
Touch screen			Dragontrail® Pro[*3]	
Communication	Wireless LAN	Applicable standard	Capacitive multi-touch screen with glove touch support and water droplet false touch prevention	
		Frequency[*4]	Compliant with IEEE802.11a/b/g/n/ac and MU-MIMO 2x2 5 GHz-band (W52, W53, W56 and W58) 2.4 GHz-band (1 to 13 channels) *USA, Canada,Taiwan(1 to 11 channels)	
		Security	Encryption:OPEN, Enhanced Open, WEP(40/128), TKIP and AES WPA authentication: WPA and WPA2 and WPA3 User authentication: PSK, EAP-TLS, and PEAP	
	Wireless WAN applicable standard[*4]		—	Supported: GSM/W-CDMA/LTE,VoLTE FDD-LTE (4G) - Bands 1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 19, 20, 25, 26, 28 TDD-LITE(4G)-Bands 39,40,41 W-CDMA/UMTS/HSPA/HSPA+ (3G) - Bands 1, 2, 5, 6, 8, 19 GSM/GPRS/EDGE (2G) - Bands 850, 900, 1800, 1900MHz
	GPS		—	A-GPS/GLONASS/QZSS/BeiDou/Galileo
	Bluetooth®connection		Bluetooth® Ver5.1+EDR/LE (Supported Profile:RFCOMM/A2DP/AVCTP/ACDTP/GVDP/AVRCP/DUN/DI/HFP/HID/HSP/IOP/MAP/OPP/BNEP/PAN/PBAP/SAP/SPP/HOGP/SCPP)	
	Wired connection		USB Ver.2.0(USB Type-C)	
	NFC[*5]		ISO/IEC14443A&B, FeliCa, ISO/IEC15693(RFID)	
Camera	Rear		13-megapixel auto-focusing with a LED light	
Card slot	Memory		microSD (SDHC and SDXC (up to128 GB))SDHC Speed class 4 support	
	SIM		—	Nano SIM×2,DSDV(4G×4G)
Microphone receiver			Attached[*6]	
Speaker			90dB or more at 10 cm away (at 2.8kHz)	
Sensor			G-sensor, gyro sensor, proximity sensor, light intensity sensor, and geomagnetic sensor	
Power Supply	Main battery		Lithium-ion battery	
	USB charging		Compliant with Qualcomm® Quick Charge™ 3.0	
	Operating time[*9]	BT3(3050 mAh)	Approx. 20 hours[*9]	
Environmental Performance	Operating temperature[*7]		-20°C to 50°C	
	Operating humidity		5 to 95%RH (non-condensing and non-icing)	
	Protective class[*8]		IP65 and IP67	
	Drop resistance[*8]		60 times or more from 1.5 m above concrete floor, 2.5 m	
Weight (including the battery)			Approx. 330 g(including BT3)	

*1: The LCD display is manufactured with precise technology.The rate of non-defective pixels is 99.99% or more, which means that 0.01% or less pixels could be stuck or dead. *2: Chargeable license is required.
*3: Dragontrail® Pro is a registered trademark of AGC Inc. *4: Actual operating channels/frequencies and bandwidths may vary depending on local regulations and approval agencies. *5: Before using the NFC function, perform test reading sufficiently using the target NFC card.*6: A headset or headphone can be connected through the USB Type-C cable. A USB Type-C-to-audio jack (3.5 mm) conversion cable is optional.
*7: 0°C to 40°C during charging. *8: These are the values tested at a room temperature, and not guaranteed values. *9: The operating time is a reference value at a room temperature and may differ depending on the operating conditions. *10: This is a result of measurement based on the JEITA HT Standard Operation Mode G, and may change depending on the operating environment and system settings.

Handheld terminal with Android™

BHT-M60 NEW

Equipped with Android™10
Operational efficiency fosterd by one-handed operation.

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes　2D Codes　OCR

Supported by BHT OCR(Software)

Display

3.2 **3.2 inch touch panel color LCD**

OS

Android™10

Interface

Bluetooth®/Wireless LAN 4G(LTE)

Card slot

micro SD(SDHC/SDXC),SDHC Support micro SIM Support

Robustness

Protection Class IP 65,IP 67

Drop Resistance: Up to 3.0 m

Features

- **Keyed model with excellent one-handed operation**
- **High-speed 4G/GPS + satellite navigation system supported, allowing getting the highly precise location.**
- **Resistance against 3.0-meter drops. 1m x 2,000 times fall impact resistance to withstand daily operations**
- **Equipped with a new decode engine and high-density sensor, Stress-free reading of labels covered by wrapping film and deformed labels**

[Components]

•Device •Hand strap •Operation guide

*Battery is not supplied with the product.

Product Configuration

[Device]
BHT-M60-QW
BHT-M60-QWG

+[Battery]
BT2S(1900 mAh battery)
BT2(3200 mAh battery)

+[Communication Unit]
CU-M60U (USB type: With a spare battery charger)
CU-M60UQ (USB type: Without a spare battery charger)*1
CU-M60L (LAN type: With a spare battery charger)

Dimensions

Options

With a spare battery charger	Without a spare battery charger	4-slot main unit charger	Single -slot battery charger	4-slot battery charger	AC adaptor	Waist case	Stylus pen	USB Type-C - Type-A conversion cable(1.5m)	USB Type-C - Audiojack conversion cable(3.5m)
CU-M60U CU-M60L	CU-M60UQ*1	CH-M60-4	CH-BT2	CH-BT2-4	AD8*1	WHBHT-M60/ S40/S30*2	PNBHT-1700	CB00-US1500/ 4A-4C	CB00-US100/ 3-4C*3

Model			CU-M60U	CU-M60L	CU-M60UQ*1	CH-M60-4	CH-BT2	CH-BT2-4
Communication system			USB2.0 (High Speed conformant)	Ethernet	USB2.0 (High Speed conformant)	—	—	—
Charging time	Unit	1900mAh Battery	Approx.2 hours	Approx.2 hours	Approx.2 hours	Approx.2 hours	—	—
		3200mAh Battery	Approx.3 hours	Approx.3 hours	Approx.3 hours	Approx.4 hours	—	—
	Battery communication charge	1900mAh Battery	Approx.2 hours	Approx.2 hours	—	—	Approx.2 hours	Approx.2 hours
		3200mAh Battery	Approx.4 hours	Approx.4 hours	—	—	Approx.3 hours	Approx.3 hours
Dimensions			127(D)×101(W)× 113(H)mm	127(D)×101(W)× 113(H)mm	127(D)×90(W)× 113(H)mm	127(D)×361(W)× 113(H)mm	112(D)×81.7(W)× 30.4(H)mm	128.8(D)×99.9(W)× 66.5(H)mm
Power supply			AC adapter*4	AC adapter*4	AC adapter(AD8)*4*5	AC adapter*4	AC adapter*4	AC adapter*4

*1:Quick Charge™3.0 supported compatible *2:The waistpack case does not include belt *3:You also need the conversion cable to equip the BHT terminal with earphones and other devices. *4:AC adaptor sold separately. *5:You need the USB Type-C - Type-A conversion cable(1.5m) when connecting the main unit to a USB adapter.

Software [P.69-81]

Development/kitting/operation tools
Software Development Kit for Android (SDK)
BHT Booster　BHT Link　BHT OCR

Terminal management/maintenance tool
BHT DMS　BHT Remote
BHT Security Package

Useful Software(Free-Preinstall)
BHTSetting　WlanManager　SNTPSetting
BHT Browser　BHT Booste　Battery Monitor
ApplicationLauncher　HardTest　BHT Logger
*Some software has optional features for a fee.

Specification

Model			2D Code model	
			Wireless LAN connection **BHT-M60-QW**	Wireless LAN+Wireless WAN **BHT-M60-QWG**
Operating System			Android™10	
CPU			Qualcomm® SDM660 64 bit 2.20 GHz(Octa-Core)	
Memory	RAM		4 GB	
	Flash ROM		64 GB	
Display	Screen size and resolution*1		3.2-inch WVGA (480×800 dots)	
	Display device		Dot matrix liquid crystal display (color)	
	Backlight		White LED	
Reader	Reading method		Area sensor	
	Supported code	2D Codes	QR code®, Micro QR code, SQRC®, PDF417, Micro PDF417, Maxi code, Data Matrix (ECC200), and GS1 Composite	
		Barcode	EAN-13/8 (JAN-13/8), UPC-A/E, UPC/EAN (with add-on), and Interleaved 2 of 5 (ITF), Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), and Standard 2 of 5 (STF), GS1 DataBar (RSS)	
		OCR*2	Supported	
	Minimum resolution	2D Codes	0.127 mm	
		Barcode	0.076 mm	
	Marker		Cross guide marker	
	Confirmation of reading		Blue LED, speaker, and vibrator	
Key Entry	Number of keys		27 keys (including the power key), cursor keys, and 3 trigger keys	
Touch screen			Dragontrail® Pro*3 Capacitive multi-touch screen with glove touch support and water droplet false touch prevention	
Communication	Wireless LAN	Applicable standard	Compliant with IEEE802.11a/b/g/n/ac and MU-MIMO 2x2	
		Frequency	5 GHz-band (W52, W53, W56 and W58) 2.4 GHz-band (1 to 13 channels) *USA, Canada,Taiwan(1 to 11 channels)	
		Security	Encryption:OPEN, Enhanced Open, WEP(40/128), TKIP and AES WPA authentication: WPA and WPA2 and WPA3 User authentication: PSK, EAP-TLS, and PEAP	
	Wireless WAN applicable standard		—	Supported: GSM/W-CDMA/LTE,VoLTE FDD-LTE (4G) - Bands 1, 3, 5, 7, 8, 19, 20, 26, 28 TDD-LTE (4G) - Bands 39, 40, 41 W-CDMA/UMTS/HSPA/HSPA+ (3G) - Bands 1, 5, 6, 8, 19
	GPS		—	A-GPS/GLONASS/QZSS/BeiDou/Galileo
	Bluetooth®connection		Bluetooth® Ver5.1+EDR/LE (Supported Profile: RFCOMM/A2DP/AVCTP/ACDTP/GVDP/AVRCP/DUN/DI/HFP/HID/HSP/IOP/MAP/OPP/BNEP/PAN/PBAP/SAP/SPP/HOGP/SCPP)	
	Wired connection		USB Ver.2.0(USB Type-C)	
	NFC*4		ISO/IEC14443A&B, FeliCa, ISO/IEC15693(RFID)	
Camera	Rear		13-megapixel auto-focusing with a LED light	
Card slot	Memory		microSD (SDHC and SDXC (up to128 GB))SDHC Speed class 4 support	
	SIM		—	Nano SIM×1
Microphone receiver			Attached*5	
Speaker			90dB or more at 10 cm away (at 2.8kHz)	
Sensor			G-sensor, gyro sensor, proximity sensor, light intensity sensor, and geomagnetic sensor	
Power Supply	Main battery		Lithium-ion battery	
	Wireless charging		Not Supported	
	USB charging		Compliant with Qualcomm® Quick Charge™ 3.0	
	Operating time*8	BT2S(1900 mAh)	Approx. 14 hours*9	
		BT2(3200 mAh)	Approx. 24 hours*9	
Environmental Performance	Operating temperature*6		-20°C to 50°C	
	Operating humidity		5 to 95%RH (non-condensing and non-icing)	
	Protective class*7		IP65 and IP67	
	Drop resistance*7		Above concrete floor, 3.0 m, 60 times or more from 1.5 m	
Weight (including the battery)			Approx. 305 g (including BT2S), approx. 320 g (including BT2)	

*1: The LCD display is manufactured with precise technology.The rate of non-defective pixels is 99.99% or more, which means that 0.01% or less pixels could be stuck or dead. *2: Chargeable license is required. *3: Dragontrail® Pro is a registered trademark of AGC Inc. *4: Before using the NFC function, perform test reading sufficiently using the target NFC card. *5: A headset or headphone can be connected through the USB Type-C cable. A USB Type-C-to-audio jack (3.5 mm) conversion cable is optional. *6: 0°C to 40°C during charging. *7: These are the values tested at a room temperature, and not guaranteed values. *8: The operating time is a reference value at a room temperature and may differ depending on the operating conditions. *9: This is a result of measurement based on the JEITA HT Standard Operation Mode G, and may change depending on the operating environment and system settings.

Handheld terminal with Android™

BHT-1800

Equipped with an thin, lightweight, ultratough 5.0-inch large display.
The new reading module offers outstanding clarity and legibility

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes 2D Codes

Display

5.0 inch touch panel color LCD

OS

Android™7.1.2

Interface

Bluetooth®/Wireless LAN 4G(LTE)

Card slot

micro SDHC/SDXC Support micro SIM Support

Robustness

Protection Class IP 67

Drop Resistance: Up to 2.5 m

Features

- **Includes GMS for compatibility with various apps**
- **Incorporates Dragontrail® PRO damage- and scratch-resistant glass.**
- **Oblique angle scanning system allows users to scan while viewing the screen.**
- **Includes a front-facing camera for identity verification.**
- **NFC compatible**
- **Operates at temperatures between -20°C and 50°C.**

*GMS (Google Mobile Services) is a suite of applications and services provided by Google.
*Dragontrail PRO is a registered trademark of AGC

[Components]

•Device •Battery(BT-180LA) •Hand strap
•Operation guide

Product Configuration

[Device]

BHT-1800QWB-1-A7
BHT-1800QWB-2-A7
BHT-1800QWB-3-A7
BHT-1800QWBG-1-A7
BHT-1800QWBG-2-A7
BHT-1800QWBG-3-A7

*Lithium ion battery (BT-180LA) included

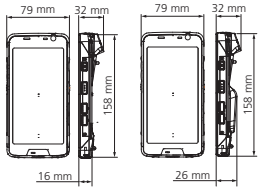
+[Communication Unit]

CU-BL1-18 (Ethernet)
CU-BU1-18 (USB)

Dimensions

BHT-1800QWB-1-A7
BHT-1800QWB-2-A7
BHT-1800QWBG-1-A7
BHT-1800QWBG-2-A7

BHT-1800QWB-3-A7
BHT-1800QWBG-3-A7



Options

Communication Unit	Four-device charger	Four-battery charger	Waist case*1	Hand-belt	Stylus pen	USB direct cable	USB power adaptor	Car charger
CU-BL1-18 CU-BU1-18	CH-B4-18	CH-1804	WHBHT-1600	HBBHT-1800	PNBHT-1700	CBBHT-US2000/ C18-4A	AD6-1005	AD7-0305

Model		CU-BU1-18	CU-BL1-18	CH-B4-18	CH-1804	CBBHT-US2000/C18-4A
Communication system		USB2.0 (High Speed conformant)	Ethernet (100BASE-T)	—	—	USB2.0 (High Speed conformant)
Charging time	Unit	Approx.4 hours/8 hours*2	Approx.4 hours		—	Approx.4 hours*3/8 hours*2
	Battery communication charge	Approx.4 hours	Approx.4 hours	—	Approx.4 hours	—
Dimensions		158(D)×110(W)×84(H) mm		141(D)×464(W) ×83(H) mm	110(D)×135(W) ×65(H) mm	2.0 m (Cable)
Power supply		Supply from the connection*6/ AC adapter*4	AC adapter*4	AC adapter*4	AC adapter*4	Supply from the connection*5

*1: The waistpack case does not include belt. *2: When connected to a PC *3: When charging from USB charger *4: The AC adaptor is an option *5: BHT-1x00 can be charged using a power adaptor (e.g., USB charger or by connecting to a PC's USB port. Make sure the device in question meets the following output and USB charge specifications: Output specification: 5 VDC ±0.25 V (voltage), 1.5 A or higher (current); USB charge specifications: Battery Charging Specifications, Rev 1.2 *6: AC adaptor required to charge spare battery

Software [P.69-81]

Development/kitting/operation tools
- Software development Kit
- BHT Booster
- BHT Link

Terminal management/maintenance tool
- BHT DMS
- BHT Remote
- BHT Security Package

Useful Software(Free-Preinstall)
- BHTSetting
- WlanManager
- SNTPSetting
- BHT Browser
- BHT Booste
- Battery Monitor
- ApplicationLauncher
- HardTest
- BHT Logger

*Some software has optional features for a fee.

Specification

Model			2D Code model					
			Wireless LAN model			Wireless LAN + Wireless WAN model		
			BHT-1800QWB-1	BHT-1800QWB-2 with the front camera	BHT-1800QWB-3 With the front camera/NFC	BHT-1800QWBG-1	BHT-1800QWBG-2 with the front camera	BHT-1800QWBG-3 With the front camera/NFC
OS			Android 7.1.2					
CPU			1.3GHz Quad-core					
Memory	RAM		2 GB					
	Flash memory		16 GB					
Display	Number of dots*1		5.0 inch HD (720x1280 pixels)					
	Display system		Liquid crystal dot matrix display (color)					
	Backlight		White LED					
Scanner	Reading system		Area sensor					
	Readable codes	2D Codes	QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF417, MaxiCode, DataMatrix(ECC200), GS1 Composite					
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)					
	Minimum resolution	2D Codes	0.167 mm					
		1D Codes	0.125 mm					
	Marker		Area guide marker					
	Scan confirmation		Blue LED, speaker, vibrator					
Keypad	Number of keys		5 keys (Including the power key) + 2 trigger keys					
Touch screen			Dragontrail PRO					
Network	Wireless LAN*2	Compatible standards	IEEE802.11a/b/g/n compliant					
		Frequency band	IEEE802.11a/n:5.2 GHz, 5.3 GHz, 5.6 GHz band, IEEE802.11b/g/n:2.4 GHz band					
		Transmission distance*3	IEEE802.11a: indoors = approx. 50 m, IEEE802.11b/g/n: indoors = approx. 75 m, outdoors = approx. 200 m					
	Security		Encryption:WEP(40/128)/TKIP/AES WPA authentication:WPA/WPA2 User authentication:PSK/EAP-TLS/PEAP					
	Wireless WAN compatible standards		—			4G LTE/3G/GSM, VoLTE		
	GPS		—			A-GPS/GLONASS		
	Bluetooth		Bluetooth Ver4.1+EDR/LE (Compatible Profile:GAP/SDAP/HSP/SPP/GOEP/OPP/HFP(AG1.5)/PAN/A2DP/AVRCP/GAVDP/HID/PBAP/HOGP/MAP/GATT)					
Mic / Receiver			—	Yes				
Card slot	Memory		Micro SDHC/SDXC (~128GB)					
	SIM		—			Nano SIM ×2		
Power supply	Main battery		Lithium-ion battery					
	Wireless charging		—		Yes	—		Yes
	Operating time*4		24 hours*5			12 hours*6		
NFC*9			—		ISO/IEC14443A&B,Felica, ISO/IEC15693(RFID)	—		ISO/IEC14443A&B,Felica, ISO/IEC15693(RFID)
Camera	Rear		8MP autofocus					
	Front		—	5MP		—	5MP	
Environmental requirements	Operating temperature*7		-20~50°C					
	Operating humidity		20 to 80% RH (no condensation or frost)					
	Protection rating*8		IP67					
	Drop resistance*8		1.5 m × 60 times or more above concrete floor, 2.5 m					
Weight (incl. battery)			Approx. 275 g					

*1: Although the effective number of picture elements accounts for at least 99.9% of the total thanks to high-precision technologies used to manufacture LCDs, please note that there might be some elements, though below 0.01%, that are missing or permanently turned on. *2: IEEE 802. 11 a: 5.2 GHz (W52) and 5.3 GHz (W53) are for indoor use only. *3: The communication distance shown are reference values, and may vary depending on the actual environmental conditions. *4: The described operating time is a reference value at room temperature and may vary depending on actual use conditions. *5: Scanning to wireless communication to screen update to standby = 1:5:1:60. The vibrator and buzzer are disabled. The wireless function is always enabled, and all other functions are disabled. *6: Scanning to scan update to standby = 1:30:270. Data is transmitted via a wireless WAN while the screen is displayed. *7: Zero to 40 degrees Celsius when batteries are being recharged.*8: Results obtained in a test done by DENSO WAVE at room temperature. They are not meant to be guaranteed values. *9: The NFC function needs to be well tested for readability by using the card that you will actually use.

Handheld terminal with Android™

BHT-1700

An Android™-based handy terminal with a 4.0-inch large display and hard keys allows one-hand operations

Basic model

long-range model

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

Display

4.0 inch touch panel color LCD

OS

Android™7.1.2

Interface

Bluetooth®/Wireless LAN 4G(LTE)

Card slot

micro SDHC/SDXC Support micro SIM Support

Robustness

Protection Class IP 67

Drop Resistance: Up to 2.5 m

Features

- **Includes GMS for compatibility with various apps**
- **Incorporates Dragontrail® PRO damage- and scratch-resistant glass.**
- **Extensive lineup includes long-range model for scanning two-dimensional QR Code®**
- **NFC compatible**
- **Operates at temperatures between -20°C and 50°C.**

*GMS (Google Mobile Services) is a suite of applications and services provided by Google.
*Dragontrail PRO is a registered trademark of AGC

[Components]*1

•Device •Hand-belt*2 •Hand strap (for 2D Code long range)
•Stylus pen •Operation guide

*1: The product does not include batteries. *2: 2D Code long range model is not supported.

Product Configuration

[Device]

BHT-1700BWB-1-A7
BHT-1700QWB-1-A7
BHT-1700QWB-2-A7
BHT-1700QLWB-P-A7
BHT-1700QWBG-1-A7
BHT-1700QWBG-2-A7

+[Battery]

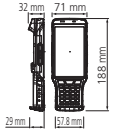
BT-110LA (Standard battery only)
BT-170LA-C (Standard battery + battery cover)
BT-110L (High-capacity battery only)
BT-170L-C (High-capacity battery + battery cover)

+[Communication Unit]

CU-BL1-17 (Ethernet)
CU-BU1-17 (USB)

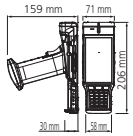
Dimensions

BHT-1700QWB-1-A7
BHT-1700QWB-2-A7
BHT-1700QWBG-1-A7
BHT-1700QWBG-2-A7



BHT-1700BWB-1-A7

BHT-1700QLWB-P-A7



Options

Model			CU-BU1-17	CU-BL1-17	CH-B4-17	CH-1104	CBBHT-US2000/C17-4A
Communication system			USB2.0 (High Speed conformant)	Ethernet (100BASE-T)	—	—	USB2.0 (High Speed conformant)
Charging time	Unit	Standard battery	Approx.3 hours/~6 hours*2	Approx.3 hours		—	Approx.3 hours*3/~6 hours*2
		Thin battery	Approx.4.5 hours/~9 hours*2	Approx.4.5 hours		—	Approx.4.5 hours*3/~9 hours*2
	Charging of the battery cartridge	Standard battery	Approx.3 hours	Approx.3 hours	—	Approx.3 hours	—
		Thin battery	Approx.4.5 hours	Approx.4.5 hours	—	Approx.6 hours	—
Dimensions			158(D)×110(W)×86(H) mm		141(D)×464(W) ×90(H) mm	206(D)×190(W) ×29(H) mm	2.0 m (Cable)
Power supply			Supply from the connection*6/ AC adapter*4	AC adapter*4	AC adapter*4	AC adapter*4	Supply from the connection*5

*1: The waistpack case does not include belt. *2: When connected to a PC *3: When charging from USB charger *4: The AC adaptor is an option *5: BHT-1x00 can be charged using a power adaptor (e.g., USB charger or by connecting to a PC's USB port. Make sure the device in question meets the following output and USB charge specifications: Output specification: 5 VDC ±0.25 V (voltage), 1.5 A or higher (current); USB charge specifications: Battery Charging Specifications, Rev 1.2 *6: AC adaptor required to charge spare battery

Software [P.69-81]

Development/kitting/operation tools
- Software development Kit
- BHT Booster
- BHT Link

Terminal management/maintenance tool
- BHT DMS
- BHT Remote
- BHT Security Package

Useful Software(Free·Preinstall)
- BHTSetting
- WlanManager
- SNTPSetting
- BHT Browser
- BHT Booste
- Battery Monitor
- ApplicationLauncher
- HardTest
- BHT Logger

*Some software has optional features for a fee.

Specification

Model			2D Code model				2D Code long model	1D Code model
			Wireless LAN model		Wireless LAN + Wireless WAN model		Wireless LAN model	Wireless LAN model
			BHT-1700QWB-1	BHT-1700QWB-2 With the rear camera / NFC	BHT-1700QWBG-1	BHT-1700QWBG-2 With the rear camera / NFC	BHT-1700QLWB-P	BHT-1700BWB-1
OS			Android 7.1.2					
CPU			1.3GHz Quad-core					
Memory	RAM		2 GB					
	Flash memory		16 GB					
Display	Number of dots*1		4.0 inch WVGA (480x800 pixels)					
	Display system		Liquid crystal dot matrix display (color)					
	Backlight		White LED					
Scanner	Reading system		Area sensor				Autofocus area sensor	Advanced Scan Plus (CCD)
	Readable codes	2D Codes	QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF417, MaxiCode,DataMatrix(ECC200), GS1 Composite				QR Code, PDF417, micro PDF417,MaxiCode, DataMatrix(ECC200), GS1 Composite	—
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)					
	Minimum resolution	2D Codes	0.167 mm				0.25 mm	—
		1D Codes	0.125 mm				0.15 mm	0.125 mm
	Marker		Area guide marker				Point marker	—
	Scan confirmation		Blue LED, speaker, vibrator					
Keypad	Number of keys		31 keys*10 +3 trigger keys				31 keys*10 +4 trigger keys	31 keys*10 +3 trigger keys
Touch screen			Dragontrail PRO					
Network	Wireless LAN*2	Compatible standards	IEEE802.11a/b/g/n compliant					
		Frequency band	IEEE802.11a/n:5.2 GHz, 5.3 GHz, 5.6 GHz band, IEEE802.11b/g/n:2.4 GHz band					
		Transmission distance*3	IEEE802.11a: indoors = approx. 50 m, IEEE802.11b/g/n: indoors = approx. 75 m, outdoors = approx. 200 m					
	Wireless WAN compatible standards		—		4G LTE/3G/GSM, VoLTE		—	
	GPS		—		A-GPS/GLONASS		—	
	Bluetooth		Bluetooth Ver4.1+EDR/LE (Compatible Profile:GAP/SDAP/HSP/SPP/GOEP/OPP/HFP (AG1.5)/PAN/A2DP/AVRCP/GAVDP/HID/PBAP/HOGP/MAP/GATT)					
Card slot	Memory		Micro SDHC/SDXC(~128GB)					
	SIM		—		Nano SIM ×2		—	
Mic / Receiver			—	Yes			—	
Power supply	Main battery		Lithium-ion battery					
	Operating time*4	Standard battery	28 hours*5		26 hours*6		30 hours*5	34 hours*5
		High-capacity battery	42 hours*5		39 hours*6		45 hours*5	51 hours*5
NFC*9			—	ISO/IEC14443A&B,Felica, ISO/IEC15693(RFID)	—	ISO/IEC14443A&B,Felica, ISO/IEC15693(RFID)	—	
Camera			—	8MP autofocus	—	8MP autofocus	—	
Environmental requirements	Operating temperature*7		-20~50°C					
	Operating humidity		20 to 80% RH (no condensation or frost)					
	Protection rating*8		IP67					
	Drop resistance*8		1.5 m × 60 times or more above concrete floor, 2.5 m				1.2 m × 60 times or more above concrete floor, 2 m	1.5 m × 60 times or more above concrete floor, 2.5 m
Weight (incl. battery)			Approx. 308 g				Approx. 438 g	Approx. 298 g

*1: Although the effective number of picture elements accounts for at least 99.9% of the total thanks to high-precision technologies used to manufacture LCDs, please note that there might be some elements, though below 0.01%, that are missing or permanently turned on. *2: IEEE 802. 11 a: 5.2 GHz (W52) and 5.3 GHz (W53) are for indoor use only. *3: The communication distance shown are reference values, and may vary depending on the actual environmental conditions. *4: The described operating time is a reference value at room temperature and may vary depending on actual use conditions. *5: Scanning to wireless communication to screen update to standby = 1:5:1:60. The vibrator and buzzer are disabled. The wireless function is always enabled, and all other functions are disabled. *6: Scanning to scan update to standby = 1:30:270. Data is transmitted via a wireless WAN while the screen is displayed. *7: Zero to 40 degrees Celsius when batteries are being recharged.*8: Results obtained in a test done by DENSO WAVE at room temperature. They are not meant to be guaranteed values. *9: The NFC function needs to be well tested for readability by using the card that you will actually use. *10: Including the power key

Handheld terminal with Android™

BHT-1600

Robust, Large-Screen Smart Terminal with Android™6.0

Basic model

Protector model

Scanner

1D Codes 2D Codes

Display

4.7 inch touch panel color LCD

OS

Android™6.0

Interface

Bluetooth®/Wireless LAN 4G(LTE)

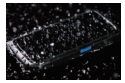
Card slot

micro SDHC/SDXC Support
micro SIM Support
micro SAM Support

Watch a video to learn about the strength of BHT-1600.

Robustness

Protection Class IP 67



Drop Resistance: Up to 1.8 m*
*For protector model only

Features

- **Phone and SMS capability**
- **Real-time data viewing (LTE communication)**
- **Compatible with a wide range of apps**
- **Non-GMS model***
- **Management tool (available for a fee) supports user from setup to operation.**
- **NFC compatible**
- **16.0 GB high-capacity memory**
- **Operates at temperatures between -20°C and 50°C.**

*Does not support applications or services provided with GMS (Google Mobile Services).

[Components]

- Device • Hand strap
- Lithium ion battery (BT-160LA)
- micro USB cable
- Direct charging cable (CBBHT-US1600/C16-4A)
- AC adapter • Hand-belt* (HBBHT-1600) • Operation guide

*For protector model only

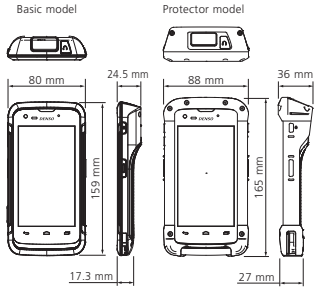
Product Configuration

[Device]

BHT-1600QWB-A6N-S (Wireless LAN model)
BHT-1600QWB-A6N-RS (Wireless LAN + protector model)
BHT-1600QWBG-A6N-S (Wireless LAN + wireless WAN model)
BHT-1600QWBG-A6N-RS (Wireless LAN + wireless WAN + protector model)

*Lithium ion battery (BT-160LA) , micro USB cable, Direct charging cable (CBBHT-US1600/C16-4A), AC adapter included

Dimensions



Options

Main unit charger | Four-device charger | Four-battery charger | Waist case | Hand-belt (for basic model) | Stylus pen | LCD protection film

CH-1631 | CH-1654 | CH-1604 | WHBHT-1600 | HBBHT-1600B | PNBHT-1600

Model			CH-1631	CH-1604	CH-1654
Charging	Charging time	Unit	Approx.4 hours*1	-	Approx.4 hours
		Battery cartridge charge	Approx.4 hours		-
Dimensions			147 (D)×120 (W)×59(H) mm	105 (D)×170 (W)×57(H) mm	141 (D)×464 (W)×78(H) mm
Power supply			Supply from the connection/AC adapter	AC adapter	

*1: The value changes depending on the supply capacity of the source (four hours when an AC adapter is used).

Software [P.69-81]

Development/kitting/operation tools
- Software development Kit
- BHT Link

Terminal management/maintenance tool
- BHT DMS

Specification

Model			Wireless LAN model	Wireless LAN + protector model	Wireless LAN + Wireless WAN model	Wireless LAN + Wireless WAN + protector model
			BHT-1600QWB-A6N-S	**BHT-1600QWB-A6N-RS**	**BHT-1600QWBG-A6N-S**	**BHT-1600QWBG-A6N-RS**
OS			Android 6.0			
CPU			Cortex A53 Quad-core 1.3 GHz			
Memory	RAM		2.0 GB (0.8 GB for user area)			
	Flash memory		16 GB (10 GB for user area)			
Display	Number of dots*1		4.7 inch HD (720x1280 pixels)			
	Display system		Liquid crystal dot matrix display (color)			
	Back light		White LED			
Scanner	Reading system		Area sensor			
	Readable codes	2D Codes	DataMatrix, MaxiCode, MicroPDF417, PDF417, QR Code, Micro QR Code			
		1D Codes	EAN-13/8 (JAN-13/8), UPC-A/E, Interleaved 2 of 5 (ITF), Standard 2 of 5 (STF), Codabar (NW-7), CODE39, CODE93, CODE128, Composite CC-A/B, Composite CC-C, GS1-128 (EAN-128), GS1 DataBar-14 (RSS-14), GS1 DataBar Limited (RSS Limited), GS1 DataBar Expanded (RSS Expanded)			
	Minimum resolution	2D Codes	0.167 mm			
		1D Codes	0.125 mm			
	Scanning reference position		120 mm			
	Marker		Cross guide marker			
	Scan Confirmation		Green LED, speaker, vibrator			
Keypad	Number of keys		Power key, 2 trigger keys, volume up key, volume down key			
Touch screen			Dragontrail glass, AF coating			
Network	Wireless LAN*2	Compatible standards	IEEE802.11a/b/g/n compliant			
		Frequency band	IEEE802.11a/n: 5.2 GHz, 5.3 GHz, 5.6 GHz, 5.8 GHz band, IEEE802.11b/g/n: 2.4 GHz band			
		Transmission distance*3	IEEE802.11a: indoors = approx. 50 m, IEEE802.11b/g/n: indoors = approx. 75 m, outdoors = approx. 200 m			
		Security	WEP WPA/WPA2 Personal(PSK): TKIP, AES WPA/WPA2 Enterprize(EAP): TKIP, AES-PEAP/TTLS/TLS/PWD/SIM			
	Wireless WAN	Compatible standards	—		LTE/3G/GSM	
	GPS		A-GPS/GLONASS			
	Bluetooth		Bluetooth Ver.4.1+BLE compliant (Compatible Profile) GAP, SDAP, HSP, SPP, GOEP, OPP, HFP (AG1.5), PAN, A2DP, AVRCP, GAVDP, HID, PBAP			
Card slot			micro SDHC/SDXC×1, micro SIM×2, micro SAM×1			
Power supply	Main battery		Lithium-ion battery (2960 mAh)			
	Operating time*4		24 hours*5		12 hours*6	
Additional functions			ISO/IEC14443A&B,Felica,ISO/IEC15693(RFID)			
Environmental requirements	Operating temperature*7		-20~50°C			
	Operating humidity		20 to 80% RH (no condensation or frost)			
	Protection rating		IP67			
	Drop resistance*8		1.2 m × 36 times	1.8 m × 36 times	1.2 m × 36 times	1.8 m × 36 times
Weight (incl. battery)			Approx. 260 g	Approx. 310 g	Approx. 260 g	Approx. 310 g

*1: Although the effective number of picture elements is more than 99.99% thanks to high-precision technologies used to manufacture LCDs, allow the possibility of some elements, less than 0.01%, that are missing or permanently turned on. *2: IEEE 802.11a: 5.2 GHz (W52) and 5.3 GHz (W53) are for indoor use only. *3: The communication distance and transmission speed shown are reference values, and may vary depending on the actual environmental conditions. *4: The described operating time is a reference fi gure under regular temperatures and may very depending on usage conditions. *5: Scanning: wireless communication: screen update: standby = 1:5:1:60. The vibrator and buzzer are disabled. The wireless function is always enabled, and all other functions are disabled. *6: Scanning: scan update: standby = 1:30:270. 1KB of data is transmitted via a wireless WAN during scan update. *7: Zero to 40°C when batteries are being recharged. *8: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

Handheld terminal with BHT-OS

BHT-S40 NEW

Handle more information in one hand with a large 3.2-inch screen.

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes 2D Codes

Display

3.2 inch color LCD

OS

BHT OS **BHT-BASIC 4.0**

Interface

Bluetooth®/Wireless LAN

Card slot

micro SD , micro SDHC Support

Robustness

Drop Resistance: Up to 2.5 m

Features

- **Large 3.2-inch screen**
- **Combines visibility and operability**
- **Equipped with a new decode engine and high-density sensor,Stress-free reading of labels covered by wrapping film and deformed labels**

[Components]
•Device •Hand strap •Operation guide
*Battery is not supplied with the product.

Product Configuration

[Device]
BHT-S40-Q
BHT-S40-QW
BHT-S40B
BHT-S40BW

+[Battery]
BT2S (1900 mAh battery)
BT2 (3200 mAh battery)

+[Communication Unit]
CU-S40U(USB type communication unit)
CU-S40L(LAN type communication unit)
CU-S40R(RS232C type communication unit)

Dimensions

Options


Communication Unit
CU-S40U
CU-S40L
CU-S40R


4-unit main unit charger
CH-S40-4


Single-unit battery charger
CH-BT2


4-unit battery charger
CH-BT2-4


Soft case
SCBHT-S40


Waist case
WHBHT-M60/S40/S30[*1]


Neck strap
NSBHT-1300


USB Type-C - Type-A conversion cable(1.5m)
CB00-US1500/4A-4C

型式			CU-S40U	CU-S40L	CU-S40R	CH-S40-4	CH-BT2	CH-BT2-4
通信方式			USB2.0 (High Speed conformant)	Ethernet	RS232C	—	—	—
Charging time	Unit	1900mAh Battery	Approx.2 hours /7 hours[*2]	Approx.2 hours	Approx.2 hours	Approx.2 hours	—	—
		3200mAh Battery	Approx.3 hours /9 hours[*2]	Approx.3 hours	Approx.3 hours	Approx.3 hours	—	—
	Battery communication charge	1900mAh Battery	—	—	—	—	Approx.2 hours	Approx.2 hours
		3200mAh Battery	—	—	—	—	Approx.3 hours	Approx.3 hours
Dimensions			110(D)×90(W)×125.8(H)mm			123.1(D)× 367.9(W)× 141.3(H)mm	112(D)× 81.7(W)× 30.4(H)mm	128.8(D)× 99.9(W)× 66.5(H)mm
Power supply			AC adapter[*3] Supply from the connection[*4]	AC adapter[*3]	AC adapter[*3]	AC adapter[*3]	AC adapter[*3]	AC adapter[*3]

*1: The waistpack case does not include belt. *2:When connected to a PC *3:AC adaptor sold separately. *4:It is can be charged using a power adaptor (e.g., USB charger or by connecting to a PC's USB port.

Software [P.69-81]

Development/kitting/operation tools
- BHT-BASIC4.0 development Kit
- BHT Browser for S Series
- BHT-BASIC4.0 Transfer Utility (EXE/DLL Pack)
- BHT-BASIC4.0 Remote Debugger
- BHT Term Emulator[*1]
- BHT Setting

Terminal management/maintenance
- BHT Manager[*1]

*1: Support only for Wireless LAN model.

Specification

Model			2D Code model		Barcode Model	
			(Bluetooth®)	(Bluetooth®+Wireless LAN)	(Bluetooth®)	(Bluetooth®+Wireless LAN)
			BHT-S40-Q	BHT-S40-QW	BHT-S40-B	BHT-S40-BW
OS			BHT-OS			
CPU			32-bit RISC microprocessor			
Memory	Flash memory		128 MB (with a user area of approx. 84 MB)			
Display	Number of dots[*1]		3.2-inch QVGA (480×800 dots)			
	Display device		Dot matrix liquid crystal display (color)			
	Number of displayed characters[*2]	Small font	10 chrs. x 16 lines (full-width) or 20 chrs. x 16 lines (half-width)			
		Standard font	8 chrs. x 13 lines (full-width) or 16 chrs. x 13 lines (half-width)			
	Backlight		White LED			
Scanner	Reading system		Area sensing		Advanced Scan Plus (CCD)	
	Readable codes	2D Codes	QR code, Micro QR code, SQRC, PDF417, Micro PDF417, Maxi code, Data Matrix (ECC200), and GS1 Composite		—	
		Barcode	EAN-13/8 (JAN-13/8), UPC-A/E, UPC/EAN (with add-on), Interleaved 2 of 5, Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), Standard 2 of 5 (STF), and GS1 DataBar(RSS)			
	Minimum resolution	2D Codes	0.127 mm		—	
		Barcode	0.076 mm		0.125 mm	
	Marker		Cross guide marker		—	
	Scan confirmation		3 color (blue, red, and green) LEDs, speaker, and vibrator			
Key Entry	Number of keys		21keys(including power key)+cross cursor key+3 trigger keys			
Communication	Wireless LAN connection	Applicable standard	—	Compliant with IEEE.802.11ac/a/b/g/n	—	Compliant with IEEE.802.11ac/a/b/g/n
		Frequency	—	5GHz-band (W52,W53,W56 and W58) 2.4GHz-band (1 to 13 channels)	—	5GHz-band (W52,W53,W56 and W58) 2.4GHz-band (1 to 13 channels)
		Access method	—	Infrastructure mode and ad-hoc mode	—	Infrastructure mode and ad-hoc mode
		Security	—	Encryption : WEP (40/128), TKIP, and AES WPA authentication : WPA and WPA2 User authentication : PSK, EAP-TLS, and PEAP	—	Encryption : WEP (40/128), TKIP, and AES WPA authentication : WPA and WPA2 User authentication : PSK, EAP-TLS, and PEAP
	Bluetooth®connection		Bluetooth® Version 5.0+EDR/LE (Supported profiles: GAP, SPP, HID, DUN, and GATT)			
	Wired connection		USB Version 2.0 (USB Type-C)			
Power supply	Main battery		Lithium-ion battery			
	Operating time[*4]	BT2S(1900mAh)	55hours[*5]/14hours[*6]	55hours[*5]/21hours[*7]	57hours[*5]/15hours[*6]	57hours[*5]/23hours[*7]
		BT2(3200mAh)	95hours[*5]/25hours[*6]	95hours[*5]/40hours[*7]	98hours[*5]/27hours[*6]	98hours[*5]/42hours[*7]
Card slot			FAT32-compliant microSD or microSDHC(~32GB)×1			
Additional Functions			Clock, speaker, vibrator, battery voltage indicator, keyboard backlight, and remote wakeup			
Environmental Performance	Operating temperature[*3]		-20℃ to 50℃			
	Operating humidity		5 to 95%RH (non-condensing and non-icing)			
	Protective class[*8]		IP65			
	Drop resistance[*8]		Above concrete floor, 2.5 m, 60 times or more from 1.5 m			
Weight (including the battery)			Approx. 242 g (including BT2S), approx. 256 g (including BT2)			

*1: The LCD display is manufactured with precise technology. The rate of non-defective pixels is 99.99% or more, which means that 0.01% or less pixels could be stuck or dead. *2: The small font is 48-dot size and the standard 60-dot size. There are also 24-dot, 30-dot, and 40-dot fonts. *3: 0 to 40 during charging. *4: The operating time is a reference value at a room temperature and may differ depending on the operating conditions. *5: Reading once per five seconds with the LCD backlight lit only during reading. *6: One cycle (30seconds): Reading (1second), Bluetooth communication (sending 1KB through a continuous connection), screen update (1second), and wait, with the LCD backlight lit only during reading, Bluetooth communication, and screen update. *7: Assuming a ratio among reading, wireless communication, screen update, and wait of 1:1:1:20, with the LCD backlight lit only during reading, wireless communication, and screen update. *8: These are the values tested at a room temperature, and not guaranteed values.

Handheld terminal with BHT-OS

BHT-S30 NEW

Compact model in a pocketable size.

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes 2D Codes

Display

2.4 inch color LCD

OS

BHT OS **BHT-BASIC 4.0**

Interface

Bluetooth®/Wireless LAN

Card slot

micro SD , micro SDHC Support

Robustness

Drop Resistance: Up to 2.0 m

Features

- **2.4-inch compact screen**
- **Pocket size. Highly portable**
- **Lightweight model weighing approx. 219g,reducing the burden of long-hour operation(with BT2S)**
- **Equipped with a new decode engine and high-density sensor, Stress-free reading of labels covered by wrapping film and deformed labels**

[Components]

•Device •Hand strap •Operation guide

*Battery is not supplied with the product.

Product Configuration

[Device]
BHT-S30-Q
BHT-S30-QW
BHT-S30B
BHT-S30BW

+[Battery]
BT2S (1900 mAh battery)
BT2 (3200 mAh battery)

+[Communication Unit]
CU-S40U(USB type communication unit)
CU-S40L(LAN type communication unit)
CU-S40R(RS232C type communication unit)

Dimensions

Options

Communication Unit	4-unit main unit charger	Single-unit battery charger	4-unit battery charger	Soft case	Waist case	Neck strap	USB Type-C - Type-A conversion cable(1.5m)
CU-S40U CU-S40L CU-S40R	**CH-S40-4**	**CH-BT2**	**CH-BT2-4**	**SCBHT-S30**	**WHBHT-M60/ S40/S30**[*1]	**NSBHT-1300**	**CB00-US1500/ 4A-4C**

型式			CU-S40U	CU-S40L	CU-S40R	CH-S40-4	CH-BT2	CH-BT2-4
通信方式			USB2.0 (High Speed conformant)	Ethernet	RS232C	—	—	—
Charging time	Unit	1900mAh Battery	Approx.2 hours /7 hours[*2]	Approx.2 hours	Approx.2 hours	Approx.2 hours	—	—
		3200mAh Battery	Approx.3 hours /9 hours[*2]	Approx.3 hours	Approx.3 hours	Approx.3 hours	—	—
	Battery communication charge	1900mAh Battery	—	—	—	—	Approx.2 hours	Approx.2 hours
		3200mAh Battery	—	—	—	—	Approx.3 hours	Approx.3 hours
Dimensions			110(D)×90(W)×125.8(H)mm			123.1(D)× 367.9(W)× 141.3(H)mm	112(D)× 81.7(W)× 30.4(H)mm	128.8(D)× 99.9(W)× 66.5(H)mm
Power supply			AC adapter[*3] Supply from the connection[*4]	AC adapter[*3]	AC adapter[*3]	AC adapter[*3]	AC adapter[*3]	AC adapter[*3]

*1: The waistpack case does not include belt. *2:When connected to a PC *3:AC adaptor sold separately. *4:It is can be charged using a power adaptor (e.g., USB charger or by connecting to a PC's USB port.

Software [P.69-81]

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Terminal management/maintenance

- BHT Manager[*1]

*1: Support only for Wireless LAN model.

Specification

Model			2D Code model		Barcode Model	
			(Bluetooth®)	(Bluetooth®+Wireless LAN)	(Bluetooth®)	(Bluetooth®+Wireless LAN)
			BHT-S30-Q	**BHT-S30-QW**	**BHT-S30-B**	**BHT-S30-BW**
OS			BHT-OS			
CPU			32-bit RISC microprocessor			
Memory	Flash memory		128 MB (with a user area of approx. 84 MB)			
Display	Number of dots[*1]		2.4-inch QVGA (240×320 dots)			
	Display device		Dot matrix liquid crystal display (color)			
	Number of displayed characters[*2]	Small font	10 chrs. x 13 lines (full-width) or 20 chrs. x 13 lines (half-width)			
		Standard font	8 chrs. x 10 lines (full-width) or 16 chrs. x 10 lines (half-width)			
	Backlight		White LED			
Scanner	Reading system		Area sensing		Advanced Scan Plus (CCD)	
	Readable codes	2D Codes	QR code, Micro QR code, SQRC, PDF417, Micro PDF417, Maxi code, Data Matrix (ECC200), and GS1 Composite		—	
		Barcode	EAN-13/8 (JAN-13/8), UPC-A/E, UPC/EAN (with add-on), Interleaved 2 of 5, Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), Standard 2 of 5 (STF), and GS1 DataBar(RSS)			
	Minimum resolution	2D Codes	0.127 mm		—	
		Barcode	0.076 mm		0.125 mm	
	Marker		Cross guide marker		—	
	Scan confirmation		3 color (blue, red, and green) LEDs, speaker, and vibrator			
Key Entry	Number of keys		21keys(including power key)+cross cursor key+3 trigger keys			
Communication	Wireless LAN connection	Applicable standard	—	Compliant with IEEE.802.11ac/a/b/g/n	—	Compliant with IEEE.802.11ac/a/b/g/n
		Frequency	—	5GHz-band (W52,W53,W56 and W58) 2.4GHz-band (1 to 13 channels)	—	5GHz-band (W52,W53,W56 and W58) 2.4GHz-band (1 to 13 channels)
		Access method	—	Infrastructure mode and ad-hoc mode	—	Infrastructure mode and ad-hoc mode
		Security	—	Encryption : WEP (40/128), TKIP, and AES WPA authentication : WPA and WPA2 User authentication : PSK, EAP-TLS, and PEAP	—	Encryption : WEP (40/128), TKIP, and AES WPA authentication : WPA and WPA2 User authentication : PSK, EAP-TLS, and PEAP
	Bluetooth®connection		Bluetooth® Version 5.0+EDR/LE (Supported profiles: GAP, SPP, HID, DUN, and GATT)			
	Wired connection		USB Version 2.0 (USB Type-C)			
Power supply	Main battery		Lithium-ion battery			
	Operating time[*4]	BT2S(1900mAh)	55hours[*5]/14hours[*6]	55hours[*5]/21hours[*7]	57hours[*5]/15hours[*6]	57hours[*5]/23hours[*7]
		BT2(3200mAh)	95hours[*5]/25hours[*6]	95hours[*5]/40hours[*7]	98hours[*5]/27hours[*6]	98hours[*5]/42hours[*7]
Card slot			FAT32-compliant microSD or microSDHC(~32GB)×1			
Additional Functions			Clock, speaker, vibrator, battery voltage indicator, keyboard backlight, and remote wakeup			
Environmental Performance	Operating temperature[*3]		-20℃ to 50℃			
	Operating humidity		5 to 95%RH (non-condensing and non-icing)			
	Protective class[*8]		IP54			
	Drop resistance[*8]		Above concrete floor, 2.0 m, 60 times or more from 1.2 m			
Weight (including the battery)			Approx. 219 g (including BT2S), approx. 233 g (including BT2)			

*1: The LCD display is manufactured with precise technology. The rate of non-defective pixels is 99.99% or more, which means that 0.01% or less pixels could be stuck or dead. *2: The small font is 48-dot size and the standard 60-dot size. There are also 24-dot, 30-dot, and 40-dot fonts. *3: 0 to 40 during charging. *4: The operating time is a reference value at a room temperature and may differ depending on the operating conditions. *5: Reading once per five seconds with the LCD backlight lit only during reading. *6: One cycle (30seconds): Reading (1second), Bluetooth communication (sending 1KB through a continuous connection), screen update (1second), and wait, with the LCD backlight lit only during reading, Bluetooth communication, and screen update. *7: Assuming a ratio among reading, wireless communication, screen update, and wait of 1:1:1:20, with the LCD backlight lit only during reading, wireless communication, and screen update. *8: These are the values tested at a room temperature, and not guaranteed values.

Handheld terminal with BHT-OS

BHT-1500

Achieving both an ultra-compact body and excellent visibility

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes

Display

2.0 **2.0 inch color LCD**

OS

BHT OS **BHT-BASIC 4.0**

Interface

Bluetooth®

Card slot

micro SDHC Support

Robustness

Drop Resistance: Up to 2.0 m

Features

- **Ease of use for on-site workers- Lightest in class (approximately 128 g)**
- **Equipped with 2.0-inch color LCD- Largest in class for superb clarity and legibility**
- **High compatibility with existing models (BHT-OS models)**
- **Easy Pack Ad basic business application preinstalled for instant deployment**
- **Compatible with eneloop® rechargeable batteries**

[Components]

•Device •Hand strap •Operation guide

*Batteries not provided with product

Product Configuration

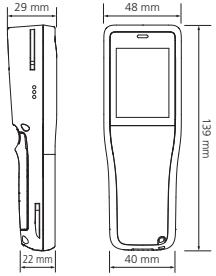
[Device]

BHT-1505B (Batch model)
BHT-1505BB (Bluetooth model)

+[Communication Unit]

CU-AR1-15 (RS-232C)
CU-AL1-15 (Ethernet)
CU-AU1-15 (USB)

Dimensions



Options

CU-AR1-15
CU-AL1-15
CU-AU1-15

Communication Cable

CBBHT-US2000/C15-4A

Four-device charger

CH-A4-15

Soft case

SCBHT-1500 (LG)
SCBHT-1500 (BK)

Waist case

WHBHT-900/1500[*1]

Neck strap

NSBHT-1300

Model			CU-AR1-15	CU-AL1-15	CU-AU1-15	CH-A4-15	CBBHT-US2000/C15-4A
Communication	BHT↔Host	Communication system	RS-232C	Ethernet (100BASE-T)	USB2.0 Full Speed conformant	—	USB2.1 Full Speed conformant
Charging	Charging time	Unit	Approx.5 hours				
Dimensions			110(D)×95(W)×98(H) mm			117(D)×368(W)×115(H) mm	2.0 m (Cable)
Power supply			AC adapter[*1]		Supply from the connection/AC adapter[*1]	AC adapter[*1]	Supply from the connection[*2]

*1: The AC adapter is an option. *2: The BHT-1500 can be charged by connecting it to a USB charger or other power adapter, or a PC USB port. When charging the BHT-1500, use a device that satisfies the following output and USB charging specifications. Output specifications: (voltage) DC5±0.25 V/(current) 1.0 A or higher USB charging specifications: Battery Charging Specification Rev. 1.2

Software [P.69-81]

Development/kitting/operation tools

- BHT-BASIC4.0 Development pack
- BHT-BASIC4.0 Transfer Utility (EXE / DLL Pack)
- BHT-BASIC4.0 Remote Debugger
- BHT Setting

Specification

Model			1D Code model (Batch model) BHT-1505B (BK)	1D Code model (Bluetooth model) BHT-1505BB (BK)
OS			BHT-OS	
CPU			32 bit RISC Microprocessor	
Memory[*1]	Flash memory		32 MB (User area: 12 MB)	
Display	Number of dots[*2]		240×320 dots (2.0 inches)	
	Display system		Liquid crystal dot matrix display (color)	
	Backlight		White LED	
Scanner	Reading system		Advanced Scan Plus(CCD)	
	Readable codes		EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 Databar(RSS)	
	Minimum resolution		0.125 mm	
	Scanning reference position		110 mm	
	Scan confirmation		Visual (3 color LED), acoustic (signal sound) and haptic (vibration)	
Keypad	Number of keys		21keys(including power key)+cross cursor key+trigger key	
Network	Optical interface	Transmission mode	Infrared ray (IrDA Ver 1.2 [Low Power] physical layer conformity)	
		Transmission speed	Up to 115.2kbps, 460.8kbps	
		Transmission distance	Approx. 0.15 m MAX.	
	Bluetooth		—	Bluetooth 2.1+EDR(HID/SPP/DUP)
Card slot			MicroSDHC × 1 slot (up to 32 GB)	
Power supply	Main battery		3 Alkaline AAA battery or 3 AAA eneloop battery	
	Operating time[*3]	Alkaline battery	85 hours[*4]	
		eneloop	70 hours[*4]	
Additional functions			Clock, buzzer, vibration, battery voltage indicators	
Environmental requirements	Operating temperature		-5~50°C[*5]	
	Operating humidity		20 to 80% RH (no condensation or frost)	
	Protection rating		IP54	
	Drop resistance[*6]		2.0 m drop on a concrete floor. 1.2 m drop on a concrete floor, 10 times each on all 6 sides (test result after a total 60 drops).	
Weight(incl. battery)			Approx.128 g	

*1: User file area includes font file area (approx. 400kb). *2: The LCD panel is manufactured using high-precision technologies. While the effective pixel count is more than 99.99%, please be aware that there may be up to 0.01% of dead or stuck-on pixels. *3: Operation hours may vary according to operating conditions. *4: With one reading pass over a 5s period and backlight level 1. *5: Zero to 40°C when batteries are being recharged. *6: Result obtained in a test under regular temperature is shown. Test value, not guaranteed.

Handheld terminal with Windows®

BHT-1400

Characterized by a large screen, robustness, and single-handed operability

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes　2D Codes　OCR

Supported by OCR model"BHT-1461QWB-CE-O" only

Display

3.2 inch touch panel color LCD

OS

Windows® Compact 7

Interface

Bluetooth®/Wireless LAN

Card slot

micro SDHC Support

Robustness

Protection Class IP 65

Drop Resistance: Up to 2.0 m

Features

- **Large 3.2-inch WVGA screen for ease of use**
- **Resists repeated minor impacts in daily use and more significant impacts.**
- **Ergonomically designed for easy single-handed use**
- **2.0 GB high-capacity memory**
- **Operates at temperatures between -20°C and 50°C.**

[Components]

•Device •Hand strap with stylus •Operation guide

*Battery and battery cover are not supplied with the product

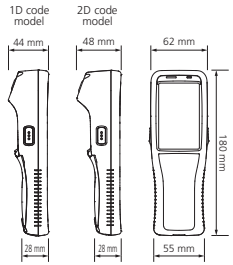
Product Configuration

[Device]
BHT-1461BWB-CE
BHT-1461QWB-CE

+[Battery]
BT-140LA-C (Battery + battery cover)
BT-110LA (Battery only)

+[Communication Unit]
CU-AR1-14 (RS-232C)
CU-AL1-14 (Ethernet)
CU-AU1-14 (USB)

Dimensions



Options

Communication Unit
CU-AR1-14
CU-AL1-14
CU-AU1-14

Four-battery charger
CH-1104

Four-device charger
CH-A4-14

Soft case
SCBHT-1400

Waist case
WHBHT-1400[*1]

Neck strap
NSBHT-1300

Model			CU-AR1-14	CU-AL1-14	CU-AU1-14	CH-1104
Communication	BHT↔Host	Communication system	RS-232C	Ethernet (100BASE-T)	USB2.0 Full Speed conformant	—
Charging	Charging time	Unit (Charging of the battery cartridge)	Approx.3 hours		Approx.12 hours[*2]	—
			—			Approx.3 hours
Dimensions			110(D)×95(W)×109(H) mm			205.5(D)×190(W)×29(H) mm
Power supply			AC adapter[*3]		Supply from the connection/ AC adapter[*3]	AC adapter[*3]

*1: Waist case does not include belt. *2: The value changes depending on the supply capacity of the source (three hours when an AC adapter is used). *3: The AC adapter is an option.

Software [P.69-81]

Development/kitting/operation tools
- Software Development Kit
- BHT Windows Simulator[*1]
- Remote desktop Plug-in
- Web browser Plug-in
- Application package for OCR intraduction[*2]

Terminal management/maintenance tool
- BHT DMS
- Version Manager

Useful Software
- kbif CE
- Wlan Manager
- Application Launcher
- BHT Backup

*1: Some functions are not supported. *2: Only BHT-1461QWB-CE-O is supported.

Specification

Model			1D Code model (Bluetooth+Wireless LAN model) BHT-1461BWB-CE	2D Code model (Bluetooth+Wireless LAN model) BHT-1461QWB-CE	OCR model (Bluetooth+Wireless LAN model) BHT-1461QWB-CE-O
OS			Windows Embedded Compact 7		
CPU			ARM Cortex-A8 800 MHz		
Memory	Flash memory		2.0 GB(User area: 1.2 GB)		
Display	Number of dots[*1]		480×800 dots (3.2 inches)		
	Display system		Liquid crystal dot matrix display (color)		
	Backlight		White LED		
Scanner	Reading system		Advanced Scan Plus(CCD)	Area sensor(CMOS)	
	Readable codes	2D Codes	—	QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF417, MaxiCode, DataMatrix(ECC200), GS1 Composite	
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)		
		OCR	—	—	Capable of scanning dot matrix characters used for the best-before date and characters on printed matter. Supported characters: alphabetical letters (uppercase), numerals, nine symbols (- . : / ( ) ＃¥), space Typical fonts: Gothic, Mincho, OCR-B, dot matrix characters, etc.
	Minimum resolution	2D Codes	—	0.167 mm	
		1D Codes	0.125 mm		
	Scanning reference position		110 mm	100 mm	
	Marker		—	Area guide marker	
	Scan confirmation		Visual (2 color LED), acoustic (signal sound) and haptic (vibration)		
Keypad	Number of keys		21keys(including power key)+cross cursor key+3 trigger keys		
Network	Wireless LAN	Compatible standards	IEEE802.11b/g/n compliant		
		Access method	Infrastructure mode		
		Security	Encryption: WEP(40/128)/TKIP/AES WPA authentication: WPA/WPA2 User authentication: PSK/EAP-TLS/PEAP/LEAP/EAP-FAST		
	Bluetooth		Bluetooth Ver2.1+EDR based class 2		
Card slot			MicroSDHC × 1 slot (up to 32 GB)		
Power supply	Main battery		Lithium-ion battery		
	Operating time[*2]		36 hours[*3]/30 hours[*4]	35 hours[*3]/32 hours[*4]	29 hours[*3]/27 hours[*4]
Additional functions			Clock, speaker, vibration, battery voltage indicator, key backlight		
Environmental requirements	Operating temperature		-20~50°C[*5]		
	Operating humidity		20 to 80% RH (no condensation or frost)		
	Protection rating		IP65		
	Drop resistance[*6]		2.0 m drop on a concrete floor. 1.5 m drop on a concrete floor, 10 times each on all 6 sides (test result after a total 60 drops).		
Weight(incl. battery)			Approx.255 g		

*1: The LCD panel is manufactured using high-precision technologies. While the effective pixel count is more than 99.99%, please be aware that there may be up to 0.01% of dead or stuck-on pixels. *2: The described operating time is a reference figure under regular temperatures and may vary depending on usage conditions. *3: With one reading pass over a 5s period and backlight level 1. *4: When ratios of reading, wireless communication, rewriting of screen and holding durations are 1:1:1:20 under continued wireless operation and backlight level 1. *5: Zero to 40°C when batteries are being recharged. *6: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

Handheld terminal with BHT-OS

BHT-1300 BHT-OS

Perfectly suitable for any situation

Running on BHT-OS, characterized by established reliability

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes 2D Codes

Display

2.4 inch color LCD

OS

BHT-BASIC 4.0

Interface

Bluetooth®/Wireless LAN

Card slot

micro SDHC Support

Robustness

Drop Resistance: Up to 2.0 m

Features

- **Runs the proprietary BHT-OS for high reliability and compatibility.**
- **Compact and lightweight; weighs approximately 188 g (with thin battery).**
- **Runs for up to 42 hours, even with always on wireless connection.**
- **Dome-shaped keys provide reliable response even when wearing gloves.**
- **Compatible with alkaline batteries**
- **Operates at temperatures between -20°C and 50°C.**

[Components]

•Device •Hand strap •Operation guide

*Battery and battery cover are not supplied with the product

Product Configuration

[Device]

BHT-1306B (Batch model)
BHT-1306BB (Bluetooth model)
BHT-1306BWB (Bluetooth + Wireless LAN model)
BHT-1306Q (Batch model)
BHT-1306QB (Bluetooth model)
BHT-1306QWB (Bluetooth + Wireless LAN model)

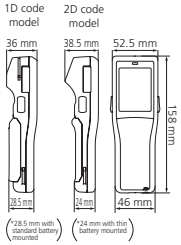
+[Battery]

BT-130LA-C (Thin battery + battery cover)
BT-130L-C (Standard battery + battery cover)
B-130D (Dry cell adapter)
BT-130LA (Thin battery only)
BT-20LB (Standard battery only)

+[Communication Unit]

CU-1301 (RS-232C)
CU-1311 (Ethernet)
CU-1321 (USB)

Dimensions



Options

Communication Unit	Communication Cable	Single battery charger	Four-battery charger	Four-device charger	Soft case	Waist case	Neck strap	Touch-scan attachment	Head protector
CU-1301 CU-1311 CU-1321	**CBBHT -US2000/ C13-4A-CE**	**CH-201B**	**CH-1104**	**CH-1354**	**SCBHT -1300**	**WHBHT -1300**[*1]	**NSBHT -1300**	**EA-13B**[*2]	**HPBHT-1300B HPBHT-1300Q**

Model				CU-1301	CU-1311	CU-1321	CH-201B	CH-1104	CH-1354	CBBHT-US2000/C13-4A
Communication	BHT↔Host	Communication system		RS-232C	Ethernet (10BASE-T)	USB2.1 Full Speed conformant	—	—	—	USB 2.0 Full Speed conformant
Charging	Charging time	Unit	Standard battery	Approx.3 hours		Approx.7 hours	—	—	Approx.3 hours	Approx.7 hours
			Thin battery	Approx.2 hours		Approx.4 hours[*3]	—	—	Approx.2 hours	Approx.4 hours
		Charging of the battery cartridge	Standard battery	—		—	Approx.3 hours	Approx.3 hours	—	—
			Thin battery	—		—	—	Approx.2 hours	—	—
Dimensions				109(D)×95(W)×111(H) mm			65(D)×44(W) ×28(H) mm	205.5(D)×190(W) ×29(H) mm	117.5(D)×368(W) ×127.7(H) mm	2.0 m(Cable)
Power supply				AC adapter[*4]		Supply from the connection/ AC adapter[*4]	AC	AC adapter[*4]		Supply from the connection[*5]

*1: Waist case does not include belt. *2: For Barcode model. *3: The value changes depending on the supply capacity of the source (three hours when an AC adapter is used). Standard battery: Approx.3 hours, Thin battery: Approx.2 hours *4: The AC adapter is an option. *5: The BHT-1300 can be charged by connecting it to a USB charger or other power adapter, or a PC USB port. When charging the BHT-1300, use a device that satisfies the following output and USB charging specifications. Output specifications: (voltage) DC5±0.25 V/(current) 1.0 A or higher USB charging specifications: Battery Charging Specification Rev. 1.2

Software [P.69-81]

Development/kitting/operation tools

BHT-BASIC4.0 Development pack ▮BHT-C Software Development Kit ▮BHT Browser
▮BHT-BASIC4.0 Transfer Utility (EXE / DLL Pack) ▮BHT-BASIC4.0 Remote Debugger
▮BHT Term Emulator[*1] ▮BHT Settin

*1: Support only for Wireless LAN model.

Terminal management tool

▮BHT Manager[*1]

Specification

Model			1D Code model (Batch model) BHT-1306B	1D Code model (Bluetooth model) BHT-1306BB	1D Code model (Bluetooth+Wireless LAN model) BHT-1306BWB	2D Code model (Batch model) BHT-1306Q	2D Code model (Bluetooth model) BHT-1306QB	2D Code model (Bluetooth+Wireless LAN model) BHT-1306QWB
OS			BHT-OS					
CPU			32 bit RISC Microprocessor					
Memory[*1] (Flash memory)			64 MB(User area: Approx.45 MB)					
Display	Number of dots[*2]		240×320 dots (2.4 inches)					
	Display system		Liquid crystal dot matrix display (color)					
	Displayable characters[*3]	16 dot fonts	15 Characters ×20 lines(double byte), 30 Characters ×20 lines(single byte)					
		24 dot fonts	10 Characters ×13 lines(double byte), 20 Characters ×13 lines(single byte)					
	Backlight		White LED					
Scanner	Reading system		Advanced Scan Plus(CCD)			Area sensor(CMOS)		
	Readable codes	2D Codes	—			QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF417, MaxiCode, DataMatrix(ECC200), GS1 Composite		
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)					
	Minimum resolution	2D Codes	—			0.167 mm		
		1D Codes	0.125 mm					
	Scanning reference position		50 mm			100 mm		
	Marker		—			Area guide marker		
	Scan confirmation		Visual (3 color LED), acoustic (signal sound) and haptic (vibration)					
Keypad	Number of keys		21keys(including power key)+cross cursor key+3 trigger keys					
Network	Optical interface	Transmission mode	Infrared ray (IrDA Ver 1.2 [Low Power] physical layer conformity)					
	Wireless LAN	Compatible standards	—		IEEE802.11b/g/n compliant	—		IEEE802.11b/g/n compliant
		Access method	—		Infrastructure mode, ad-hoc mode	—		Infrastructure mode, ad-hoc mode
		Security	—		Encryption: WEP(40/128)/TKIP/AES WPA authentication: WPA/WPA2 User authentication: PSK/EAP-TLS/PEAP	—		Encryption: WEP(40/128)/TKIP/AES WPA authentication: WPA/WPA2 User authentication: PSK/EAP-TLS/PEAP
	Bluetooth		—	Bluetooth Ver2.1+EDR based class 2		—	Bluetooth Ver2.1+EDR based class 2	
	Cradle interface		USB Ver2.0(USB microB)					
Card slot			MicroSDHC × 1 slot (up to 32 GB)					
Power supply	Main battery		Lithium-ion battery or 3 AAA alkaline batteries (separately sold battery adaptaer required)					
	Operating time[*4]	Standard battery	98 hours[*5]	98 hours[*5]/27 hours[*8]	98 hours[*5]/42 hours[*6*7]	95 hours[*5]	95 hours[*5]/25 hours[*8]	95 hours[*5]/40 hours[*6*7]
		Thin battery	57 hours[*5]	57 hours[*5]/15 hours[*8]	57 hours[*5]/23 hours[*6*7]	55 hours[*5]	55 hours[*5]/14 hours[*8]	55 hours[*5]/21 hours[*6*7]
		AAA Alkaline batteries	55 hours[*5]	55 hours[*5]/11 hours[*8]	55 hours[*5]/20 hours[*6*7]	45 hours[*5]	45 hours[*5]/10 hours[*8]	45 hours[*5]/17 hours[*6*7]
Additional functions			Clock, speaker, vibration, battery voltage indicator, key backlight, remote wake-up					
Environmental requirements	Operating temperature		-20~50°C[*9]					
	Operating humidity		20 to 80% RH (no condensation or frost)					
	Protection rating		IP54					
	Drop resistance[*10]		2.5 m drop on a concrete floor (with head protector). 2.0 m drop on a concrete floor. 1.2 m drop on a concrete floor, 10 times each on all 6 sides (test result after a total 60 drops).					
Weight(incl. battery)			Approx.188 g(With thin battery), Approx.206 g(With standard battery)					

*1: User file area includes font file area (approx. 400 kb) *2: The LCD panel is manufactured using high-precision technologies. While the effective pixel count is more than 99.99%, please be aware that there may be up to 0.01% of dead or stuck-on pixels. *3: The standard font, small font, 30 dot font, and 40 dot font may be set aside from the 16 bit font and 24 bit font. *4: The described operating time is a reference figure under regular temperatures and may vary depending on usage conditions. *5: With one reading pass over a 5s period and backlight level 1. *6: When ratios of reading, wireless communication, rewriting of screen and holding durations are 1:1:1:20 under continued wireless operation and backlight level 1. *7: Read out: Wireless communication: Screen rewritten: Character=1:1: 1: 20. Backlight level 1 wireless communication is on. Other time wireless communication is off. *8: 1cycle/30 sec.= Readout (1sec.), Bluetooth communication (Transmission 1KB/constant connection), Screen rewritten (1sec.), Wait. Backlight level 1. *9: Zero to 40°C when batteries are being recharged. *10: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

Handheld terminal with Windows®

BHT-1300 Windows®-OS

Perfectly suitable for any situation

Versatile terminal running on Windows OS, usable in any environment

GLOBAL PRODUCTS

3 YEAR WARRANTY

* It is necessary to register your product on our Website to receive the three-year warranty.
The consumable parts specified by Denso carries a one-year warranty.

Scanner

1D Codes 2D Codes

Display

2.4 **2.4 inch touch panel color LCD**

OS

Windows OS **Windows® Compact 7**

Interface

Bluetooth®/Wireless LAN

Card slot

micro SDHC Support

Robustness

Drop Resistance: Up to 2.0 m

Features

- **Uses the widespread and versatile Windows® operating system and taps into extensive developer support base.**
- **Compact and lightweight; weighs approximately 193 g (with thin battery).**
- **Runs up to 28 hours, even with always on wireless connection.**
- **Dome-shaped keys provide reliable response even when wearing gloves.**
- **2.0 GB high-capacity memory**
- **Operates at temperatures between -20°C and 50°C.**

[Components]

•Device •Hand strap with stylus pen •Operation guide

*Battery and battery cover are not supplied with the product

Product Configuration

[Device]

BHT-1361B-CE (Batch model)
BHT-1361BWB-CE (Bluetooth + Wireless LAN model)
BHT-1361Q-CE (Batch model)
BHT-1361QWB-CE (Bluetooth + Wireless LAN model)

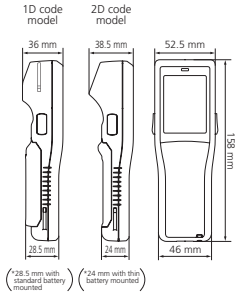
+[Battery]

BT-130LA-CE-C (Thin battery + battery cover)
BT-130L-CE-C (Standard battery + battery cover)
BT-130LA (Thin battery only)
BT-20LB (Standard battery only)

+[Communication Unit]

CU-1301A (RS-232C)
CU-1311A (Ethernet)
CU-1321 (USB)

Dimensions



Options

Communication Unit	Communication Cable	Single battery charger	Four-battery charger	Four-device charger	Soft case	Waist case	Neck strap	Touch-scan attachment	Head protector
CU-1301A CU-1311A CU-1321	CBBHT-US2000 /C13-4A-CE	CH-201B	CH-1104	CH-1354	SCBHT-1300	WHBHT-1300*1	NSBHT-1300	EA-13B*2	HPBHT-1300B HPBHT-1300Q

Model				CU-1301A	CU-1311A	CU-1321	CH-201B	CH-1104	CH-1354	CBBHT-US2000/C13-4A-CE
Communication	BHT↔Host	Communication system		RS-232C	Ethernet (100BASE-T)	USB2.0 Full Speed conformant	—	—	—	USB 2.0 Full Speed conformant
Charging	Charging time	Unit	Standard battery	Approx.3.5 hours		Approx.10 hours	—	—	Approx.3.5 hours	Approx.10 hours*3/Approx.3.5 hours*4
			Thin battery	Approx.2.5 hours		Approx.6 hours	—	—	Approx.2.5 hours	Approx.6 hours*3/Approx.2.5 hours*4
		Charging of the battery cartridge	Standard battery	—	—	—	Approx.3 hours	Approx.3 hours	—	—
			Thin battery	—	—	—	Approx.3 hours	Approx.2 hours	—	—
Dimensions				109(D)×95(W)×111(H) mm			65(D)×44(W)×28(H) mm	205.5(D)×190(W)×29(H) mm	112(D)×368(W)×128(H) mm	2.0 m(Cable)
Power supply				AC adapter*5		Supply from the connection / AC adapter*5	AC	AC adapter*5		Supply from the connection*6

*1: Waist case does not include belt. *2: For Barcode model. *3: Supply from PC *4: Using USB charger *5: The AC adapter is an option. *6: The BHT-1300 can be charged by connecting it to a USB charger or other power adapter, or a PC USB port. When charging the BHT-1300, use a device that satisfies the following output and USB charging specifications. Output specifications: (voltage) DC5±0.25V/ (current) 1.2A or higher USB charging specifications: Battery Charging Specification Rev. 1.2

Software [P.69-81]

Development/kitting/operation tools

- Software Development Kit
- BHT Windows Simulator
- Remote desktop Plug-in
- Web browser Plug-in

Terminal management/maintenance tool

- BHT DMS*1
- Version Manager

Useful Software

- kbif CE
- Wlan Manager
- Application Launcher
- BHT Backup

*1: Support only for Bluetooth + Wireless LAN model.

Specification

Model			1D Code model (Batch model) BHT-1361B-CE	1D Code model (Bluetooth+Wireless LAN model) BHT-1361BWB-CE	2D Code model (Batch model) BHT-1361Q-CE	2D Code model (Bluetooth+Wireless LAN model) BHT-1361QWB-CE
OS			Windows Embedded Compact 7			
CPU			ARM Cortex-A8 800 MHz			
Memory	RAM		Mobile DDR 512 MB			
	Flash memory		2.0 GB(User area: 1.2 GB)			
Display	Number of dots*1		240×320 dots (2.4 inches)			
	Display system		Liquid crystal dot matrix display (color)			
	Backlight		White LED			
Scanner	Reading system		Advanced Scan Plus(CCD)		Area sensor(CMOS)	
	Readable codes	2D Codes	—		QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF417, MaxiCode, DataMatrix(ECC200), GS1 Composite	
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)			
	Minimum resolution	2D Codes	—		0.167 mm	
		1D Codes	0.125 mm			
	Scanning reference position		50 mm		100 mm	
	Marker		—		Area guide marker	
	Scan confirmation		Visual (2 color LED), acoustic (signal sound) and haptic (vibration)			
Keypad	Number of keys		21keys(including power key)+cross cursor key+3 trigger keys			
Network	Wireless LAN	Compatible standards	—	IEEE802.11b/g/n	—	IEEE802.11b/g/n
		Access method	—	Infrastructure mode	—	Infrastructure mode
		Security	—	Encryption: WEP(40/128)/TKIP/AES WPA authentication: WPA/WPA2 User authentication: PSK/EAP-TLS/ PEAP/LEAP/EAP-FAST	—	Encryption: WEP(40/128)/TKIP/AES WPA authentication: WPA/WPA2 User authentication: PSK/EAP-TLS/ PEAP/LEAP/EAP-FAST
	Bluetooth		—	Bluetooth Ver2.1+EDR based class 2	—	Bluetooth Ver2.1+EDR based class 2
Card slot			microSDHC/microSD card (~32 GB)×1			
Power supply	Main battery		Lithium-ion battery			
	Operating time*2	Standard battery	30 hours*3	30 hours*3/28 hours*4*5	29 hours*3	29 hours*3/27 hours*4*5
		Thin battery	17 hours*3	17 hours*3/15 hours*4*5	16 hours*3	16 hours*3/14 hours*4*5
Additional functions			Clock, speaker, vibration, battery voltage indicator, key backlight			
Environmental requirements	Operating temperature		-20~50°C*6			
	Operating humidity		20 to 80% RH (no condensation or frost)			
	Protection rating		IP54			
	Drop resistance*7		2.5 m drop on a concrete floor (with head protector). 2.0 m drop on a concrete floor. 1.2 m drop on a concrete floor, 10 times each on all 6 sides (test result after a total 60 drops).			
Weight			Approx.193 g(With thin battery mounted), Approx.211 g(With standard battery mounted)			

*1: The LCD panel is manufactured using high-precision technologies. While the effective pixel count is more than 99.99%, please be aware that there may be up to 0.01% of dead or stuck-on pixels. *2: The described operating time is a reference figure under regular temperatures and may vary depending on usage conditions. *3: With one reading pass over a 5s period and backlight level 1. *4: When ratios of reading, wireless communication, rewriting of screen and holding durations are 1:1:1:20 under continued wireless operation and backlight level 1. *5: Read out: Wireless communication: Screen rewritten: Character=1:1: 1: 20. Backlight level 1 wireless communication is on. Other time wireless communication is off. *6: Zero to 40°C when batteries are being recharged. *7: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

Handheld terminal with BHT-OS

BHT-1306QWB-H

Temperature sensor model

Conventional method

Manufacturing process ▶ Inspection ▶ Packaging for shipment ▶ Shipment

- Acceptance of raw materials
- Mixing • Filling
- Packaging
- Heat treatment
- Cooling

- Microbiological examination
- Chemical analysis
- Sensory test
- Foreign matter inspection

If the product is found to be defective during an inspection, measures are implemented here.

- Stop shipment
- Recall products

HACCP method [example]

Raw materials★ ▶ Mixing★ ▶ Filling ▶ Packaging ▶ Heat treatment★ ▶ Cooling ▶ Packaging for shipment ▶ Shipment

- Essential processes that should be controlled to prevent serious hazards are identified as critical control points.
- If a problem is found based on the monitoring of critical control points, improvement measures are implemented immediately.

* Processes other than critical control points are subject to general hygiene control.

★: Critical control point
This handy terminal is designed for the HACCP process.
HACCP: Hazard Analysis and Critical Control Point

Barcode/QR Code information (recorded date and time) + Ingredient information (temperature)

[Cooking staff/Recording staff]

Mr. Namio Denso　Ms. Namiko Denso

[Information about cooked food]　[Information about cooked food]

Hamburger

Cheeseburger

Security and safety

- Prevent food contamination
- Increase efficiency of work
- Ensure centralized management
- Eliminate the use of paper forms

Product Configuration

[Device]	+ Communication Unit	+ Thermometer	+ [Fixing cover]
BHT-1306QWB-H	**CU-1301** (RS-232C) **CU-1311** (Ethernet) **CU-1321** (USB)	Core thermometer	**EA-13H**

Software

Development/kitting/operation tools
- BHT-BASIC4.0 Transfer Utility (EXE / DLL Pack)

Software for setting
- SQRC Setting

Specification

Model			(Temperature sensor model) **BHT-1306QWB-H**
OS			BHT-OS
Memory	Flash memory*1		64 MB(User area: 45 MB)
Display	Display system		Liquid crystal dot matrix display (color)
Scanner	Minimum resolution	2D Codes	0.167 mm
		1D Codes	0.125 mm
Power supply	Main battery		A lithium-ion battery or three AAA alkaline dry cells (A dry cell adapter sold separately is required.)
	Operating time*2	Standard battery	95 hours*3/40 hours*4*5
		Thin battery	55 hours*3/21 hours*4*5
Environmental requirements	Operating temperature		-20~50°C*6
	Operating humidity		20 to 80% RH (no condensation or frost)
	Protection rating		IP54
	Drop resistance*7		2.0 m drop on concrete floor. 1.2 m drop on concrete floor, 10 times each on all 6 sides (test result after a total of 60 drops).
Weight			Approx. 190 g(With thin battery), Approx. 208 g(With standard battery)

*1: The user area includes font file area (approx. 400 KB). *2: The described operating time is a reference figure under regular temperatures and may vary depending on usage conditions. *3: With one reading pass over a 5s period and backlight level 1. *4: When ratios of reading, wireless communication, rewriting of screen and holding durations are 1:1:1:20 under continued wireless operation and backlight level 1. *5: Read out: Wireless communication: Screen rewritten: Character=1:1: 1: 20. Backlight level 1 wireless communication is on. Other time wireless communication is off. *6: Zero to 40°C when batteries are being recharged. *7: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

Handy scanner

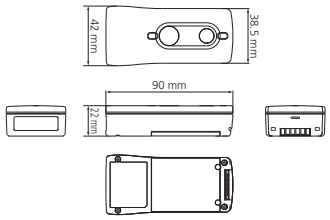
SF1

Small and robust scanner

SF1-BB　SF1-QB

[Components]
- Device • Battery (attached to the main unit)

Dimensions



Scanner

1D Codes　2D Codes

Weight

Approx.80 g*
*With battery

Interface

Bluetooth®

Robustness

Protection Class IP 54

Drop Resistance: Up to 2.5 m

Features

- **Magnesium frame for class-leading robustness**
- **Operates at temperatures between -20°C and 50°C.**

Options

Single device charge — **CH-SF11**

Four-device charger — **CH-SF14**

Hand strap — **HSSE1**

Neck strap (with reel) — **NS1-001**

Belt clip (with reel) — **AW1-001**

Bluetooth Communication Unit — **BA20-RU**

Model		CH-SF11	CH-SF14	BA20-RU*1
Communication	BA↔Host	—	—	RS-232C/USB*2
	Scanner↔BA	—	—	Bluetooth Ver2.1
Charging	Charging time	2.5 hours		—
Power supply		AC adapter		Supplied from the connection/AC adapter

*1: This product has a built in wireless system based on Bluetooth Wireless Technology.
*2: Supports both USB keyboard interface and USB-COM interface. Please use USB-COM interface mode for configuration.

Software

Software for setting
- QR_kbif
- Scanner Setting*1
- Scanner Setting 2D*2
- SQRC Setting*2
- BA Setting

*1: For 1D Code model. *2: For 2D Code model.

Specification

Model			1D Code model **SF1-BB**	2D Code model **SF1-QB**
Scanner	Reading system		Advanced Scan Plus (CCD)	Area senser
	Readable codes	2D Codes	—	QR Code, SQRC, iQR, micro QR Code, DataMatrix(ECC200), PDF417, micro PDF417, MaxiCode,Aztec, GS1 Composite
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)	
	Minimum resolution	2D Codes	—	0.167 mm
		1D Codes	0.125 mm	
	PCS value		0.3 min	
	Slope angle/elevation angle		±50°	
	Scan confimation		Visual (3 color LED), acoustic (signal sound) and haptic (vibration)	
Communication interface	Interdace		Bluetooth Ver2.1+EDR based class 2	
	Profile		SPP, HID	
Power	Power supply		Lithium-ion battery	
	Operating time*1		48 hours	24 hours
Environmental requirements	Operating temperature*2		-20~50°C	
	Operating humidity		10 to 90% RH (no condensation or frost)	
	Protection rating		IP54	
	Drop resistance*3		2.5 m drop on a concrete floor, 1.5 m × 100 times drop on a concrete floor, 0.5 m × 3000 times	
Weight (incl. battery)			Approx.80 g	

*1: Reading codes once every five seconds. *2: Zero to 40°C when batteries are being recharged. *3: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

SE1

Pocket-size model

GLOBAL PRODUCTS

Scanner

1D Codes 2D Codes

Weight

Approx.110 g*
*With battery

Interface

Bluetooth®

Robustness

Protection Class IPX2

Drop Resistance: Up to 1.2 m

Features

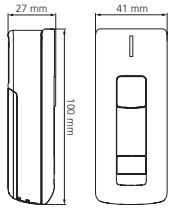
- **Runs for up to 100 hours; accepts ordinary alkaline batteries in the event of unanticipated dead batteries.**
- **Compatible with eneloop® rechargeable batteries**

[Components]

•Device •Operation guide

*The product does not include batteries. *BA20-RU is sold separately.

Dimensions



Options

Single device charger

CH-SE11

Four-device charger

CH-SE14

Hand strap

HSSE1

Neck strap

NSBHT-1300

Silicone cover

Silicone cover for SE1 series (Clear)

Silicone cover for SE1 series (Black)

Bluetooth Communication Unit

BA20-RU

Model		**BA20-RU**[*1]
Communication	BA↔Host	RS-232C/USB[*2]
	Scanner↔BA	Bluetooth Ver.2.1
Power supply		Supply from the connection

*1: This product has a built in wireless system based on Bluetooth Wireless Technology.
*2: Supports both USB keyboard interface and USB-COM interface. Please use USB-COM interface mode for configuration. Please check the connection beforehand because this type of connection may not be possible depending on the model of the PC or USB hub.

Software

Software for setting

QR_kbif Scan Tune App BA Setting SQRC Setting[*1]

*1: For 2D Code model.

Specification

Model			1D Code model **SE1-BB**	2D Code model **SE1-QB**
Scanner	Reading system		Advanced Scan Plus (CCD)	Area sensor
	Readable codes	2D Codes	—	QR Code, micro QR Code, iQR Code, SQRC, PDF417, micro PDF417, DataMatrix(ECC200), Aztec, GS1 Composite, MaxiCode
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE32, CODE39, CODE93, CODE128, GS1-128(EAN-128), MSI, Plessey, GS1 DataBar(RSS)	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS), Standard 2 of 5(STF)
	Minimum resolution	2D Codes	—	0.167 mm
		1D Codes	0.125 mm	
	PCS value		0.30 min	
	Slope angle/elevation angle		±50°	
	Scan confirmation		Visual (2 color LED), acoustic (signal sound)	
Communication interface	Interface		Bluetooth Ver2.1+EDR based class 2	
	Profile		SPP, HID	
Power	Power supply		Alkaline AA battery × 2 or eneloop × 2	
	Operating time		100 hours[*1]	50 hours[*1]
Environmental requirements	Operating temperature		-5~50°C	
	Protection rating		IPX2	
	Drop resistance[*3]		1.2 m × 6 times drop on concrete floor.	
Weight (incl. battery)			Approx. 110 g[*4]	

*1: Reading codes once every five seconds. *2: Result obtained in a test under regular temperature is shown and not meant as a guarantee. *3: Result obtained in a test under regular temperature is shown and not meant as a guarantee. *4: When using eneloop.

Handy scanner

GT20

Robust, high-spec model

GLOBAL PRODUCTS

5 YEAR WARRANTY

* For USB model and RS-232C model. The warranty covers only the body and not the cable or battery.

3 YEAR WARRANTY

* For Bluetooth model. Body only.

Scanner

1D Codes　2D Codes

Weight

Approx.180 g

Interface

USB/RS-232C

Bluetooth®

Robustness

Protection Class IP 65

Drop Resistance: Up to 2.0 m

Features

- **Drop resistance of 2 m × 60 times (among best in class) for peace of mind**
- **Features magic keys for assigning various functions to speed up work.**
- **Free software available for easy setting of parameters on PC**
- **Operates at temperatures between -20°C and 50°C.**

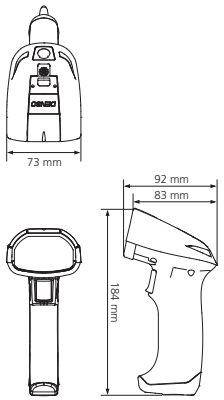
[Components]

RS-232C model · USB model
- Device
- Interface cable
- AC adapter(For RS-232C model)
- Operation guide

Bluetooth model
- Device (with battery)
- Charger
- AC adapter
- Hand strap
- Operation guide

*BA20-RU is sold separately.

Dimensions



Options

Charger

CH-GT20L

Holder

S-GT20


S-GT21[*1]

Neck strap

NSBHT-1300

Communication Unit

BA20-RU

Hands-free stand

H-GT10


H-GT11


H-GT20


H-GT21[*2]

Waist case

K-GT10

Model		CH-GT20L	BA20-RU[*3]
Communication	BA↔Host	—	RS-232C/USB[*4]
	Scanner↔BA	—	Bluetooth Ver.2.1
Charging	Charging time	2.5 hours	—
Power supply		AC adapter	Supply from the connection

*1: S-GT21 can be used in two ways (on the desk or on the wall). *2: This product is the oil resistance mechanism. *3: This product has a built in wireless system based on Bluetooth Wireless Technology. *4: Supports both USB keyboard interface and USB-COM interface. Please use USB-COM interface mode for configuration. Please check the connection beforehand because this type of connection may not be possible depending on the model of the PC or USB hub.

Software

Software for setting

QR_kbif　Scanner Setting[*1]　Scanner Setting 2D[*2]　SQRC Setting[*3]　BA Setting

*1: For 1D Code model. *2: For 2D Code model.

Specification

Model			1D Code model (USB) GT20B-SM(U)	1D Code model (RS-232C) GT20B-SM(R)	1D Code model (Bluetooth) GT20B-SB-V2	2D Code model (USB) GT20Q-SM(U)	2D Code model (RS-232C) GT20Q-SM(R)	2D Code model (Bluetooth) GT20Q-SB-V2
Scanner	Reading system		Advanced Scan Plus(CCD)			Area sensor(CMOS)		
	Readable codes	2D Codes	—			QR Code, SQRC, iQR Code, micro QR Code, DataMatrix(ECC200), PDF417, micro PDF417, MaxiCode, Aztec, GS1 Composite		
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE32, CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)			EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)		
	Minimum resolution	2D Codes	—			0.167 mm		
		1D Codes	0.125 mm					
	Marker		—			Area guide marker		
	PCS value		0.30 min					
	Slope angle/elevation angle		±50°					
	Scan confimation		Visual (3 color LED), acoustic (signal sound) and haptic (vibration)					
Communication interface	Interface		USB[*1]	RS-232C	Bluetooth Ver2.1+EDR based class 2	USB[*1]	RS-232C	Bluetooth Ver2.1+EDR based class 2
	Connection interface		USB connector (type A)	Dsub-9S	—	USB connector (type A)	Dsub-9S	—
	Profile		—	—	SPP, HID	—	—	SPP, HID
	Cable		2 m Cable	2 m Cable, 5 m Cable	—	2 m Cable	2 m Cable, 5 m Cable	—
Power			USB port[*2]	AC adapter	Built-in battery	USB port[*2]	AC adapter	Built-in battery
Environmental requirements	Operating temperature[*3]		-20~50°c					
	Operating humidity		10~90% RH (no condensation or frost)					
	Protection rating		IP65					
	Drop resistance[*4]		2.0 m × 60 times drop on concrete floor.					
Weight			Approx. 180 g (excl. cable)		Approx. 230 g (incl. cable)	Approx. 180 g (excl. cable)		Approx. 230 g (incl. cable)

*1: Two methods are supported: a USB keyboard interface and a USB-COM interface. The factory default is a USB keyboard interface for GT20B and a USB-COM interface for GT20Q. *2: Please check the connection beforehand because this type of connection may not be possible depending on the model of the PC or USB hub. *3: Zero to 40°C when batteries are being recharged. *4: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

AT20

Standard model focusing on operability

AT20

AT21

GLOBAL PRODUCTS

5 YEAR WARRANTY

* The warranty covers only the device and not the cable or battery.

Scanner

1D Codes / 2D Codes

Weight

Approx.105 g

Interface

USB/RS-232C

Bluetooth®

Robustness

Drop Resistance: Up to 2.0 m

Features

- **Deep scanning range from close to distant targets**
- **Also supports mobile QR Code®. Allows use with services including mobile coupons and mobile membership cards.**
- **The Bluetooth® model allows connection to tablet terminals and smartphones.**
- **Free software available for easy setting of parameters on PC**

[Components]

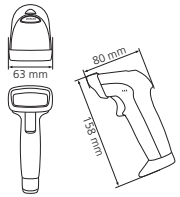
RS-232C model · USB model
- Device
- Interface cable
- AC adapter
  (Only for the RS-232C model with a power supply through the AC adapter)
- Operation guide

Bluetooth model
- Device (with battery)
- Charger (CH-AT10L)
- AC adapter
- Hand strap
- Operation guide

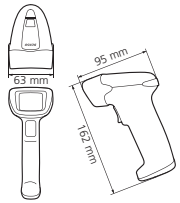
*BA20-RU is sold separately.

Dimensions

RS-232C model·USB model



Bluetooth model



Options

Charger

CH-AT10L

Holder

S-AT20

S-AT21

S-AT10

S-AT30

Neck strap

NSBHT-1300

Bluetooth Communication Unit

BA20-RU

Hands-free stand

H-AT10

H-AT20

H-AT21

H-AT20-2

H-AT20-3

Model		CH-AT10L	BA20-RU*1
Communication	BA↔Host	—	RS-232C/USB*2
	Scanner↔BA	—	Bluetooth Ver.2.1
Charging	Charging time	2.5 hours	—
Power supply		AC adapter	Supply from the connection

*1: This product has a built in wireless system based on Bluetooth Wireless Technology. *2: Supports both USB keyboard interface and USB-COM interface. Please use USB-COM interface mode for configuration. Please check the connection beforehand because this type of connection may not be possible depending on the model of the PC or USB hub.

Software

Software for setting

QR_kbif ▮Scanner Setting*1 ▮Scanner Setting 2D*2 ▮SQRC Setting*2 ▮BA Setting*3

*1: For 1D Code model. *2: For 2D Code model. *3: For Bluetooth model.

Specification

Model		1D Code model	
		(RS-232C model) **AT20B-SM(R) AT21B-SM(R)**	(USB model) **AT20B-SM(U) AT21B-SM(U)**
Scanner	Reading system	Advanced Scan Plus(CCD)	
	Readable codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2of5(ITF), Standard 2of5(STF), Codabar(NW-7), CODE32, CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS), MSI, Plessey	
	Minimum resolution	0.125 mm	
	Slope angle/elevation angle	±50°	
	Scan confirmation	Visual (3 color LED), acoustic (signal sound)	
Communication interface	Interface	RS-232C	USB(COM, HID)*1
	Connection interface	Dsub-9pin	USB connector (type A)
	Cable	2 m straight	
Power supply		AC adapter, Supply from the connection*3	Supply from the connection*3
Environmental requirements	Protection rating	IP42	
	Drop resistance*5	2.0 m drop on concrete floor. 0.2 m drop on concrete floor, over 100000 times.	
Weight		Approx. 105 g(excl. cable)	

Model			2D Code model						
			(RS-232C model) **AT20Q-SM(R)/ AT21Q-SM(R)**	(USB model) **AT20Q-SM(U)/ AT21Q-SM(U)**	(RS-232C model) **AT21Q-HM(R)**	(USB model) **AT21Q-HM(U) USB model**	(RS-232C model) **AT25Q-SM(R)/ AT26Q-SM(R)**	(USB model) **AT25Q-SM(U)/ AT26Q-SM(U)**	(Bluetooth model) **AT27Q-SB**
Scanner	Reading system		Area sensor(CMOS)						
	Readable codes	2D Codes	QR Code, micro QR Code, SQRC, iQR Code, DataMatrix(ECC200), PDF417, micro PDF417, MaxiCode, Aztec, GS1 Composite						
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)						
	Minimum resolution	2D Codes	0.167 mm		0.125 mm		0.167 mm		
		1D Codes	0.125 mm		0.10 mm		0.125 mm		
	Marker		LED Marker				Area guide marker		
Communication interface	Interface		RS-232C	USB (COM, HID)*2	RS-232C	USB (COM, HID)*2	RS-232C	USB (COM, HID)*2	Bluetooth Ver2.1+EDR based class 2
	Connection interface		Dsub-9S	USB connector (type A)	Dsub-9S	USB connector (type A)	Dsub-9S	USB connector (type A)	—
Power	Power supply		AC adapter / Supply from the connection*3	Supply from the connection*3	AC adapter / Supply from the connection*3	Supply from the connection*3	AC adapter / Supply from the connection*3	Supply from the connection*3	Battery (SB-10L)
	Operating time*4		—						28 hours
Environmental requirements	Protection rating		IP42						IP54
	Drop resistance*5		2.0 m drop on concrete floor. 0.2 m drop on concrete floor, over 100000 times.						1.8 m × 6 times drop on concrete floor
Weight			Approx. 110 g (excl. cable)						Approx. 200 g (incl. battery)

*1: Two interfaces are supported (USB keyboard [HID] and USB-COM). The interface is set to USB-COM at shipment. *2: Two interfaces are supported (USB keyboard [HID] and USB-COM). The interface is set to USB-COM at shipment. *3: Please check the connection beforehand because this type of connection may not be possible depending on the model of the PC or USB hub. *4: When codes are scanned every five seconds (using fully charged new batteries). In the case of connection established with the AT22B-SB (master) through communication with the BA20-RU. *5: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

Handy scanner

AT30

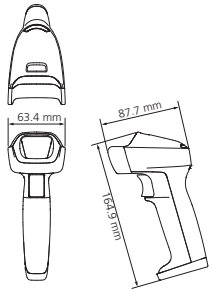
2D scanners also support "touch scanning"

AT30Q

AT31Q

[Components]
- Device • Interface cable
- AC adapter
  (Only for the RS-232C model with a power supply through the AC adapter)
- Operation guide

Dimensions



DESIGN AWARD 2016

GLOBAL PRODUCTS

5 YEAR WARRANTY

* The warranty covers only the device and not the cable or battery.

Scanner

1D Codes 2D Codes

Weight

Approx.125 g

Interface

USB/RS-232C

Robustness

Drop Resistance: Up to 2.0 m

Features

- **Supports both touch scanning and distant scanning.**
- **The scanner features a new design that incorporates an open space at the top to allow users to check codes while scanning.**
- **Also supports mobile QR Code®. Allows use with services including mobile coupons and mobile membership cards.**
- **Free software available for easy setting of parameters on PC**

Options

Holder — S-AT30

Hands-free stand — H-AT30

Software

Software for setting
- QR_kbif
- Scanner Setting 2D
- SQRC Setting

Specification

Model			2D Code model	
			(USB model) **AT30Q-SM(U)/AT31Q-SM(U)**	(RS-232C model) **AT30Q-SM(R)/AT31Q-SM(R)**
Scanner	Reading system		Area Sensor (CMOS)	
	Readable codes	2D Codes	QR Code, SQRC, iQR Code, Micro QR Code, Data Matrix (ECC200), PDF417, Micro PDF417, Maxicode, Aztec, GS1 Composite	
		1D Codes	EAN-13/8 (JAN-13/8), UPC-A/E, UPC/EAN (with add-on), Interleaved 2 of 5 (ITF), Standard 2 of 5 (STF), Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), GS1 Databar (RSS)	
	Minimum resolution	2D Codes	0.167 mm	
		1D Codes	0.125 mm	
	Marker		LED point marker	
	PCS value		0.30 min	
	Angle		±50°	
	Skew angle		360°	
	Image capture		BMP, JPEG output, thumbnail view	
	Scanning confirmation		Visual (3 color LED), acoustic (signal sound)	
Communication interface	Interface		USB*1	RS-232C
	Connection interface		USB connector (A type)	Dsub-9S
	Cable		2 m	2 m, 5 m
Power			Supply from the connection*2	Supply from the connection, directed AC adapter
Environment requirements	Operating temperature		-5~50°C	
	Operating humidity		10 to 90% RH (without dews)	
	Protection rating		IP42	
	Drop resistance*3		2.0 m drop on concrete floor. 0.2 m drop on concrete floor, over 100000 times.	
Weight (excl. cable)			Approx. 125 g	

*1: Two methods are supported: a USB keyboard interface and a USB-COM interface. The factory default is USB-COM interface. *2: Please check the connection beforehand because this type of connection may not be possible depending on the model of the PC or USB hub. *3: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

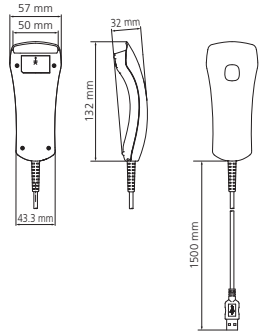
Handy scanner

SH1

A compact model that is easy to keep clean

[Components]
- Device
- Operation guide

Dimensions



Scanner

1D Codes 2D Codes

Weight

Approx.55 g

Interface

USB

Robustness

Drop Resistance: Up to 1.5 m

Features

- **Slim, compact model ideal for use in confined spaces**
- **Includes vibration function for reliable scanning confirmation**

Software

Software for setting
- Scanner Setting

Specification

Model			1D Code model **SH1-BU**	2D Code model **SH1-QU**
Scanner	Reading system		Advanced Scan Plus(CCD)	
	Readable codes	2D Codes	—	QR Code, SQRC, Micro QR Code, Data Matrix (ECC200), PDF417, Micro PDF417, Maxicode, Aztec, GS1 Composite
		1D Codes	EAN-13/8 (JAN-13/8), UPC-A/E, UPC/EAN (with add-on), Interleaved 2 of 5 (ITF), Standard 2 of 5 (STF), Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), GS1 Databar (RSS)	
	Minimum resolution		0.125 mm	
	PCS value		0.3 min	
	Angle		±50°	
	Scanning confirmation		Visual (1 color LED), acoustic (signal sound) and haptic (vibration)	
Communication interface	Interface		USB 1.1*1	
	Connection interface		USB connector(type A)	
	Cable		1.5 m straight cable	
Power	Power supply		Supply from the connection*2	
Environment requirements	Operating temperature		1.5 m × 30 times drop on concrete floor	
	Operating humidity		0~50°C	
	Drop resistance*3		10 to 90% RH(no condensation or frost)	
Weight (excl. cable)			Approx. 55 g	

*1: Two methods are supported: a USB keyboard interface and a USB-COM interface. *2: Please check the connection beforehand because this type of connection may not be possible depending on the model of the PC or USB hub. *3: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

Handy scanner

HC76

Contact scanning model for New POS

Scanner: 1D Codes
Weight: **Approx. 85 g**
Interface: **USB/ RS-232C**
Robustness: **Drop Resistance: Up to 1.5 m**

- **Grip design allows scanning at any angle.**
- **Touch scanning model for ease of use by anyone**

[Components]
- Device
- Operation guide

5 YEAR WARRANTY

* The warranty covers only the device and not the cable or battery.

Options

Holder
S-70

Software

Software for setting
QR_kbif Scanner Setting

Specification

Model		1D Code model		
		(USB model) **HC76TU**	(RS-232C model) **HC76TR**	
Scanner	Reading system	Advanced Scan(CCD)		
	Readable codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Standard 2 of 5(STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)		
	Minimum resolution	0.125 mm		
	Elevation angle	20°≧ α ≧0°*1		
Communication interface	Interface	USB1.1*2	RS-232C	
	Connection interface	USB connector (type A)	Dsub-9P	DIN-8P
	Cable	2 m straight	2 m straight	0.6m curl cable
Power supply		Supply from the connection*3	Power supply host type / AC adapter supply type	Power supply host type
Environmental requirements	Drop resistance*4	1.5 m × 30 times drop on concrete floor.		
Weight(excl. cable)		Approx. 85 g		

*1: The barcode scanner uses the JAN 13 digit black & white barcode for the JIS standard. *2: The barcode scanner supports two methods for USB keyboard interface and USB COM interface. *3: Depending on the USB interface that the scanner is connected to (PC type and/or the USB-HUB), the USB interface may not power the scanner. *4: This is a test value not a guaranteed value.

Handy scanner

QS20P

Micro QR Code® contact scanning model

Scanner: 2D Codes
Weight: **Approx. 170 g**
Interface: **USB/ RS-232C**

- **Capable of scanning micro QR Code® with minimum cell size of 0.1 mm**
- **Pen-style model for easy targeting**

[Components]
- Device
- Operation guide

Software

Software for setting
QR_kbif

Specification

Model		2D Code model	
		(USB model) **QS20P-A11-U**	(RS-232C model) **QS20P-A11-R**
Scanner	Readable codes	QR Code, micro QR Code, DataMatrix(ECC200)	
	Minimum resolution	0.1 mm	
	Scanning reference position	0 mm(touch)	
	Reading size	11×11 mm	
	PCS value	0.45 min	
	Slope angle / elevation angle	±35°	
Communication interface	Interface	USB	RS-232C
	Connection interface	USB connector (type A)	Dsub-9 P
	Cable	3 m	2 m
Power supply		Supply from the connection	AC adapter
Environmental requirements	Operating temperature	0~40°C	
	Drop resistance*1	1.0 m × 6 times drop on concrete floor.	
Weight(incl. cable)		Approx. 180 g	Approx. 170 g

*1: Result obtained in a test under regular temperature is shown and not meant as a guarantee.

Handy scanner

GT20QD

Designed for direct part marking on metallic workpieces

Scanner: 1D Codes / 2D Codes
Weight: **Approx. 210 g**
Interface: **USB/ RS-232C**
Robustness: **Protection Class IP 65G*** / **Drop Resistance: Up to 2.0 m**

* In compliance with JIS C 0920 (with the connector cover for the interface cable locked).

- **Drop resistance of 2.0 m × 6 times (among industry best)**
- **Allows reliable scanning even with metallic targets and micro codes.**
- **G grade oil-resistant construction (among industry best).**

[Components]
- Device
- Interface cable
- Operation guide

Options

Holder
S-GT20

Hands-free stand
H-GT20
H-GT21

Software

Software for setting
Scanner Setting DPM QR_kbif SQRC Setting

Specification

Model			2D Code model	
			(RS-232C model) **GT20QD-SM(R)**	(USB model) **GT20QD-SM(U)**
Scanner	Readable codes	2D Codes	QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF417, MaxiCode, DataMatrix(ECC200), GS1 Composite	
		1D Codes	EAN-13/8(JAN-13/8),UPC-A/E, UPC/EAN (With add-on), Interleaved 2 of 5 , Codabar(NW-7), CODE 39, CODE 93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)	
	Minimum resolution	2D Codes	0.1mm	
		1D Codes	0.1mm	
	Marker		Visual (1 color LED)	
Communication interface	Interface		RS-232C	USB(COM, HID)*1
	Connection type		Dsub-9 P	USB connector (type A)
Power supply			AC adapter	
Environmental requirements	Protection rating		IP65G*2	
	Drop resistance*3		2.0 m × 6 times drop on concrete floor.	
Weight(excl. cable)			Approx. 210 g	

*1: USB (COM.HID) support 2 systems for USB keyboard interface and USB-COM interface. *2: Comply with JIS C0920. Interface cable connector covers locked condition is guaranteed. *3: This is a test value not a guaranteed value.

Fixed type scanner

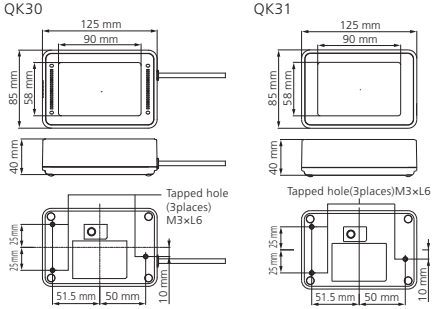
QK30

High-speed scanning of mobile QR Code®

[Components]

•Device •Operation guide

Dimensions



Scanner

1D Codes 2D Codes

Weight

Approx.170 g

Interface

USB/RS-232C

Features

- **Offers high-speed scanning of mobile QR Code® and barcodes.**
- **Ideal for use with mobile coupons and mobile membership cards**
- **Wide scanning angle handles even codes displayed on large-screen smartphones**
- **Range of silicone cases for different environments**
- **Free software available for easy setting of parameters on PC**

Options

Silicone cover


Silicone cover for QK30 series (Blue) *


Silicone cover for QK30 series (Black) *


Silicone cover for QK30 series (Clear) *

* QK31 does not support.

Software

Software for setting

QR_kbif
Scanner Setting 2D
SQRC Setting

Specification

Model			2D Code model		
			Stationary type	Built-in type	
			(USB model) **QK30-U**	(USB model) **QK31-U**	(RS-232 model) **QK31-R**
Scanner	Readable codes	2D Codes	QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF, DataMatrix, Aztec, GS1 Composite, MaxiCode		
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, Interleaved 2 of 5(ITF), Codabar(NW-7), CODE39, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS), UPC/EAN(With add-on), CODE93, Standard 2 of 5(STF)		
	Minimum resolution	2D Codes	0.25 mm		
		1D Codes	0.18 mm		
	Reading sight		70×50 mm		
	Scanning reference position		7 mm*1		
	Scan confirmation		Visual (3 color LED), acoustic (signal sound)	—	
Communication interface	Interface		USB1.1(COM, HID)*2		RS-232C
	Connection type		USB connector: type A (with an integrated cable)	USB connector: type B (with a detachable cable)	Mini-DIN connector (with a detachable cable)
	Cable		1.5 m	1.4 m (Sold separately)	1.5 m (Sold separately)
Power			Supplied from the connection target*3		
Environmental requirements	Operating temperature		-5~50°C		
	Operating humidity		10-90% RH (no condensation or frost)		
	Protection range		IPX2	—	
Weight			250 g(incl. cable)	170 g(excl. cable)	

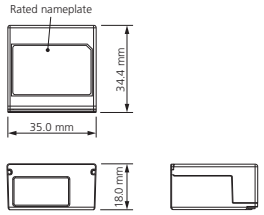
*1: Height from dust-proof plate *2: Two systems are supported: USB keyboard interface and USB-COM interface.When using in USB-COM interface mode, please download the USB driver from the DENSO WAVE website (free of charge). 3: Please check the connection beforehand because this type of connection may not be possible depending on the model of the PC or USB hub.

Fixed type scanner

QM30

Ultra-small 3.5 cm case dimensions incorporation into a wide range of devices.

Dimensions



Scanner

1D Codes 2D Codes

Weight

Approx.18 g

Interface

8-pin board to wire connector/ USB

Features

- **DENSO WAVE's smallest and lightest ever integral scanner.**
- **3.5 cm case dimensions allows installation in a wide range of devices.**
- **Incorporates latest module developed by DENSO WAVE.**
- **Operates at temperatures between -10°C and 50°C.**

Software

Software for setting

Scanner Setting 2D SQRC Setting

Specification

Model			2D Code model		
			QM30-SU	**QM30-SS**	**QM30-CS**
Enclosure color			Black		
Scanner	Readable codes	2D Codes	QR Code,micro QR Code,SQRC, DataMatrix,PDF417,micro PDF417,Aztec		
		1D Codes	EAN-13/8,UPC-A/E,UPC/EAN(With add-on), Interleaved 2 of 5,CODABAR(NW-7),CODE39,CODE93,CODE128(EAN-128),GS1 DataBar(RSS)		
	Minimum resolution	2D Codes	0.167 mm		
		1D Codes	0.125 mm		
	Image sensor		480,000-pixel CMOS image sensor		
	Lighting		Red LED		White LED
	Marker		Red LED		
	Field of view (in degrees)		Horizontal: 40°, vertical: 30°		
	LCD code		Supported		
	PCS value		0.30 or higher		
	Skew angle		360°		
	Elevation angle, inclination angle		±50°		
Communication interface	Interface		USB 2.0 compliant (COM, HID)		Serial (TTL level)
	Connector		USB connector micro USB		8-pin board to wire connector
Power, current consumption			DC5V ±5%, 500 mA (scanning) , 180 mA(standby)		
Environmental requirements	Operating humidity		10 to 90% (no condensation or freezing)		
	Operating remperature		-10~50°C		
Weight			Approx. 18 g		

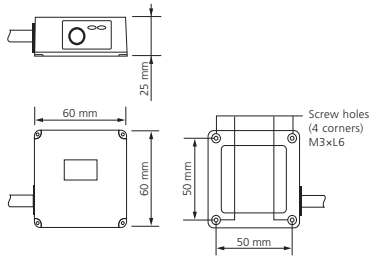
Fixed type scanner

QB33

Compact installation and built-in model

[Components]
• Device • Operation guide

Dimensions



GLOBAL PRODUCTS

Scanner

1D Codes 2D Codes

Weight

Approx.120 g

Interface

USB/RS-232C

Features

- **Wide scanning model for installation in confined spaces**
- **Scan low quality 2D code with scanning algorithm as the developer of QR code.**
- **Operates at temperatures between -20°C and 50°C.**

Software

Software for setting
QR_kbif Scanner Setting SQRC Setting

Specification

Model			2D Code model	
			(RS-232C model) **QB33-SR**	(USB model) **QB33-SU**
Enclosure color			White	
Scanner	Readable codes	2D Codes	QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF417, MaxiCode, DataMatrix(ECC200), Aztec, GS1 Composite	
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5, Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)	
	Minimum resolution	2D Codes	0.20 mm	
		1D Codes	0.15 mm	
	Scanning reference position		40 mm	
	Reading sight*1		62×39 mm	
	Lighting		1 color(Blue, Green, Red)	
	Scan confirmation		Visual (3 color LED), acoustic (signal sound) and haptic (vibration)	
Communication interface	Interface		RS-232C*2 (mini D-sub15PIN)	USB
	Cable		0.5 m	2 m
Power	Power rating		5V	
	Power supply		Supplied from the connection target	
Additional functions	Operation button		1 button (magic key)	
Environmental requirements	Operating temperature		-20~50°C	
	Protection range		IP54	
Weight			Approx. 120 g	Approx. 150 g

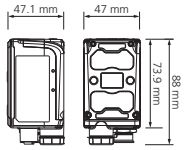
*1: Value at the scanning reference position *2: When the RS-232C model is connected to an external device by using the D-sub9PIN, a D15-to-D9S conversion cable and an AC adopter are required.

Fixed type scanner

FD2 NEW

From minute workpieces to longdistance scanning, complete freedom simply with the touch of a button

Dimensions



Scanner

1D Codes 2D Codes

Weight

Approx.217 g

Interface

USB/Ethernet/RS-232C

Features

- **No detailed adjustments based on the workpiece are necessary.**
  High-speed, stable scanning is possible from codes marked on 2 mm diameter pins to codes marked on large parts at a distance of 1.2 m simply with the touch of a button.
- **Compact design makes installation easy even in limited spaces**

Software

Software for setting
Scanner Setting F

Specification

Model			Standard type **FD2-HS1000-ERU**	Wide type **FD2-HW1000-ERU**
Scanner	Readable codes	2D Codes	QR Code, micro QR Code, rMQR Code, SQRC, DataMatrix(ECC200), PDF417, micro PDF417, Maxi CodeEAN.UCC Composite(GS1 DataBar Composite)	
		1D Codes	EAN-8/13, UPC-A/E, UPC/EAN(With add-on), CODE39, CODABAR(NW-7), Interleaved 2 of 5, CODE128, GS1-128(EAN-128), RSS(GS1 DataBar)	
	Minimum resolution	2D Codes	0.06 mm	
		1D Codes	0.08 mm	
	Scanning distance		110~1200mm	50~720mm
	Reading sight		185×148mm (at scanning distance of 600 mm)	384×307mm (at scanning distance of 600 mm)
	Adjustment		Auto focus, lighting filter auto tuning	
	Number of scan conditions		16	
Communication interface	Interface		Ethernet, RS-232C,USB	
	Industrial protocols		EtherNet/IP, ORiN	
Power supply			DC24V±10%	
Environmental requirements	Operating temperature		-10~45°C	
	Protection range		IP65	
	Vibration resistance		Oscillation frequency: 10 to 500 Hz, sweep: 11 min, half amplitude: 0.75 mm (acceleration upper limit: 100 m/s2)	

Wearable SF1

Tough and clean wearable scanner

Scanner

1D Codes 2D Codes

Weight

Approx.80 g*
*With battery. SF1-QBi-T only

Interface

Bluetooth®

Robustness

Protection Class IP 54

Drop Resistance: Up to 2.5 m

Features

- **Cable-free design lets users wear or hold the scanner during use.**
- **Made of carefully selected materials, the attachment ensures comfort and convenience when using the product.**
- **Magnesium frame for class-leading robustness (SF1-QBi-T).**

Product Configuration

[Scanner]
SF1-QBi-T

+

[Scanner holder]
AW4-001-R

+

[Wearable attachment]
AW2-001-R

[Attachment base]
AW3-001-R

Washable

Options

Communication Unit

CH-SF11

4 serial unit rechargers

CH-SF14

Communication Unit

BA-20-RU

Software

Software for setting

QR_kbif DENSO SF1 SDK for iOS Scanner Setting 2D SQRC Setting BA Setting

Specifications for main unit

Model			2D Code model **SF1-QBi-T**
Exterior color			Dark gray
Scanner	Read system		Area sensor
	Readable codes	2D Codes	QR Code, SQRC, Micro QR Code, DataMatrix (ECC200), PDF417, Micro PDF417, Maxicode, Aztec, GS1 Composite
		1D Codes	EAN-13/8, UPC-A/E, UPC/EAN (with add-on), Interleaved 2 of 5, Standard 2 of 5, Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), GS1 DataBar (RSS)
	Minimum resolution	2D Codes	0.167mm
		1D Codes	0.125mm
	PCS value		0.3 or higher
	Elevation angle, inclination angle		±50°
	Scan confirmation		Confirmation W-LED (blue, green, red), buzzer, vibrator
Network	Method		Bluetooth Ver. 2.1 +EDR-based class 2
	Profile		SPP, HID, SPP (for iOS)
Power	Power supply		Lithium-ion battery
	Operating time *1		24 hours
	Charging time		2.5 hours
Environmental performance	Protection rating		IP54
	Drop resistance *2		Drop impact test: 2.5/1.5 m, 100 times; tumble impact test: 0.5 m, 3,000 times
	Operating temperatures *3		-20~50°c
	Operating humidity		10 to 90% RH (no condensation or freezing)
	Ambient light		10,000 lux or lower (daylight color fluorescent lamps)
Weight (incl. battery)			Approx. 80 g
Trigger switch			Button type/touch type
Supported iOS devices			Made for iPhoneX,iPhone8,iPhone8Plus,iPad Pro 12.9-inch (2nd generation),iPad Pro 10.5-inch, iPad(5th generation), iPod touch(6th generation)

*1: When code is scanned once every 5 seconds *2: Test (not guaranteed) value *3: Allowable ambient temperatures during charging range from 0 to 40°C.

Wearable attachment

Model	**AW2-001-R**
Color	Black and cyan (blue)
Trigger switch	Button type
Weight	Approx. 50 g

RFID Handheld terminal with BHT-OS

BHT-615QUMWB

Specified low-power radio station model

Black White

[Components]

•Device •Battery (BT-20LB) •Hand strap •Operation guide

Scanner

1D Codes 2D Codes RF TAG

Display

2.8 **2.8 inch color LCD**

OS

BHT OS **BHT-BASIC 4.0**

Interface

Bluetooth®/Wireless LAN

Product Configuration

[Device]
BHT-615QUMWB Black
BHT-615QUMWB White

+[Battery]
BT-20LB (Lithium-ion battery)

+[Communication Unit]
CU-601 (RS-232C)
CU-611 (Ethernet)
CU-621 (USB)

Options

Communication Unit	Single battery charger	Four-battery charger	Single device charger	Four-device charger	Soft case	Waist case
CU-601/CU-611/CU-621	**CH-201B**	**CH-1104**	**CH-651**	**CH-654**	**SCBHT-600QUMWB**	**WHBHT-7000/7500***

*: Holster does not include belt.

Software [P.69-81]

Specification

Model				BHT-615QUMWB Black	BHT-615QUMWB White
Enclosure color				Black	White
OS				BHT-OS	
Memory(Flash memory)*1				32 MB(approx.23 MB for user area)	
Display	Number of dots*2			2.8inchQVGA(240×320dots)	
	Display system			Liquid crystal dot matrix display(color)	
Scanner	RFID	Readable and recordable RF tag		ISO/IEC18000-63 TypeC(EPCglobal Class1 Gen2)-supported Tag	
		Transmission rate		40 kbps	
		Scanning distance/360°		0~1000 mm*3	
	Scanner	Readable codes	2D Codes	QR Code,Micro QR Code,SQRC,DataMatrix(ECC200),PDF417,Micro PDF417, Maxi Code,GS1 Composite	
			1D Codes	EAN-13/8(JAN-13/8),UPC-A/E,UPC/EAN(With add-on),Interleaved 2 of 5(ITF), Codabar(NW-7),CODE39,CODE93,CODE128,GS1-128(EAN-128),GS1 DataBar(RSS)	
		Minimum resolution	2D Codes	0.167 mm	
			1D Codes	0.125 mm	
		Scanning reference position		100 mm	
Number of keys				28keys(including power key)+2trigger keys+cursor key	
Communication interface	Optical interface			Infrared ray (IrDA Ver1.3 physical layer conformity)	
	Wireless LAN	Compatible standards		IEEE802.11b/g	
		Security		Encryption:WEP(40/128)/TKIP/AES WPA authentication:WPA/WPA2 User authentication:PSK/EAP-TLS/PEAP	
	Bluetooth			Bluetooth Ver2.1+EDR based class 2	
	Cable interface			RS-232C(115.2 kbps MAX.)	
Power Supply	Operating time			21 hours*4	
Weight(incl. battery)				Approx.315 g	
Supported countries				Japan	

*1: User file area includes font file area (approx. 400 kb). *2: The LCD panel is manufactured using high-precision technologies. While the effective pixel count is more than 99.99%, please be aware that there may be up to 0.01% of dead or stuck-on pixels. *3: The indicated communication range is a theoretically possible value, and it may vary depending on environmental conditions under which the product is used. *4: When ratios among reading, wireless communication, screen refreshing and standing-by are 1:1:1:20. If LCD backlight is in its low setting, wireless communication is turned on only when data is sent/received and turned off otherwise.

RFID fixed type scanner

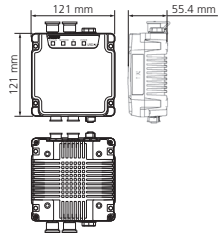
UR50 NEW

A fixed type scanner of UHF RF tags ideal for factory automation and logistics (250 mW / middle-distance type)

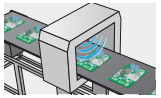
[Components]

•Device •Operation guide

Dimensions



Examples of Use



Visualization of production status

Rewriting returnable box slips

Scanner

RF TAG

Interface

USB/Ethernet

Features

- **UR50 reads tags reliably even on fast-moving conveyor belt assembly lines***
- **Reading ranges configured to match applications**
- **Antenna-integrated structure allows easy installation.Up to 2 external antennas can be added to secure a stable communication zone.**

*: There are setting limits depending on the country or the function. This is a reference value and may vary depending on the operating environment.

Options

	model
External antenna	URAN-50M1
Power/control cable* (2 m)	CBUR-PS2000/17-NC
Ethernet cable (2 m)	1585D-M4UBJM-2
USB cable (1.5 m)	CB00-US1500/4A-5B-01
I/O cable (2 m)	CBUR-PS2000/12-NC
Coaxial cable cable (5 m/10 m)	CBAN-CTNC5000/10000

*: Includes RS232C serial communications

Software

Development/operation tools

UR40-H-ERU/UR50-M-ERU System Program

Software for setting

Scanner Setting F

Specification

Model			UR50-M-ERU
RF Tag Communication Part	Output frequency (for United States of America)		915.25 MHz to 927.5 MHz, (at 250kHz intervals) (50 channels in total)
	Compatible Standard		ISO/IEC 18000-63 (GS1 EPC Gen2) compliant
	Transmission Output		250 mW or below
	Gain (polarization) Integrated/Extended Antenna		+3 dBi or below (linearly, circularly polarized wave) / +2 dBi or below (circularly polarized)
	Reading Distance*1 Integrated/Extended Antenna		3 m (linearly polarized), 2 m (circularly polarized) / 1 m (circularly polarized)
	Number of Antennas Connectable		Maximum of 2 (URAN-50M1 supported)
Display Part	Display LED		4 LEDs(STATUS LED, NETWORK LED, RF LED, POWER LED)
External Input/ Output	Input		4 pins (trigger, reset, forced halt)
	Output		4 pins(OK, NG, BUSY, WARNING, ERROR)
Interface	RS-232C		115.2 Kbps maximum
	USB		USB-COM interface
		Standard	USB1.1compliant(12Mbps)
		Connector	Micro-USB Type-B
	Ethernet	Standard	IEEE802.3 100BASE-T compliant
		Supported Protocols	TCP, UDP, EtherNet/IP
ORiN			Supported
Input Power Supply*2	Operating Power Supply Voltage		24V DC + 10% -15%
	Electric Current Consumption		600mA Max
Environmental Conditions	Indoor or Outdoor Operation		Indoor use
	Protection Rating		IP65*3
	Compatible Standard Safety/ Vibrations and Impacts		UL61010/IEC60068
	Operating Temperature Range		-20~50°C
	Operating Humidity Range		10%-95% RH (no condensation or freezing)
External Dimensions (main body / external antenna) (W)×(D)×(H)*4			121×121×55.4mm/70×70×30mm
Weight (main body / external antenna)*5			Approx. 640 g / Approx. 75 g

*1: This is a reference value and may vary depending on the operating environment. *2: Class 2 power supply is recommended *3: With all cables and caps connected *4: Shipped state

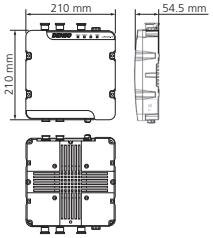
RFID fixed type scanner

UR40 NEW

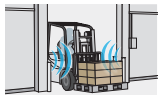
A fixed type scanner of UHF RF tags ideal for factory automation and logistics (1W / long-distance type)

[Components]
•Device •Operation guide

Dimensions



Examples of Use



Reliable inspection of shipping and receiving

Rewriting returnable box slips

Scanner

RF TAG

Interface

USB/Ethernet

Features

- **High-speed reading rate of 600 tags/second* for accurate and quick execution of tasks**
- **Reading ranges configured to match applications**
- **Antenna-integrated structure allows easy installation.Up to 3 external antennas can be added to secure a stable communication zone.**

*: There are setting limits depending on the country or the function. This is a reference value and may vary depending on the operating environment

Software

Development/operation tools
UR40-H-ERU/UR50-M-ERU System Program

Software for setting
Scanner Setting F

Options

	model
External antenna	URAN-40H1
Power/control cable*1 (2 m)	CBUR-PS2000/17-NC
Ethernet cable (2 m)	1585D-M4UBJM-2
USB cable (1.5 m)	CB00-US1500/4A-5B-01
I/O cable (2 m)	CBUR-PS2000/12-NC
Coaxial cable cable (5 m/10 m)	CBAN-CTNC5000/10000

*: Includes RS232C serial communications

Specification

Model			UR40-H-ERU
RF interface	Output frequency (for Europe)		865.7 MHz, 866.3 MHz, 866.9 MHz, 867.5 MHz(4 channels in total)
	Output frequency (for Australia, New Zealand)		920.25 MHz, 925.75 MHz, (at 500kHz intervals) (12 channels in total)
	Output frequency (for United States of America, Canada)		915.25 MHz to 927.5 MHz, (at 250kHz intervals) (50 channels in total)
	Application standard		ISO/IEC 18000-63 (GS1 EPC Gen2) compliant
	Transsmission output		1 W max.
	Number of Antennas Connectable		Maximum of 3 (URAN-40H1 supported)
Internal/External antenna	Gain(for Europe) Internal/External		+5 dBi max. (linearly, circularly polarized) / +5 dBi max. (circularly polarized)
	Gain(for Australia, New Zealand, United States of America, Canada)Internal/External		+6 dBi max. (linearly, circularly polarized) / +6 dBi max. (circularly polarized)
	Reading Distance*1 Internal/External		8 m (linearly polarized),6 m (circularly polarized) / 6 m (circularly polarized)
Display Part	Display LED		4 LEDs(STATUS LED, NETWORK LED, RF LED, POWER LED)
External Input/ Output	Input		4 pins (trigger, reset, forced halt)
	Output		4 pins(OK, NG, BUSY, WARNING, ERROR)
Interface	RS-232C		115.2 Kbps maximum
	USB		USB-COM interface
		Standard	USB1.1compliant(12Mbps)
		Connector	Micro-USB Type-B
	Ethernet	Standard	IEEE802.3 100BASE-T compliant
		Supported Protocols	TCP, UDP, EtherNet/IP
ORiN			Supported
Input Power Supply*2	Operating Power Supply Voltage		24V DC + 10% -15%
	Electric Current Consumption		1A Max
Environmental Conditions	Indoor or Outdoor Operation		Indoor use
	Protection Rating		IP65*3
	Compatible Standard Safety/ Vibrations and Impacts		UL61010/IEC60068
	Operating Temperature Range		-20~50°C
	Operating Humidity Range		10%-95% RH (no condensation or freezing)
External Dimensions (main body / external antenna)(W)×(D)×(H)*4			210×210×54,5mm/210×210×37mm
Weight (main body / external antenna)*5			Approx. 1780 g / Approx. 700 g

*1: This is a reference value and may vary depending on the operating environment. *2: Class 2 power supply is recommended *3: With all cables and caps connected *4: Shipped state

RFID table Scanner®

UR20 SERIES

Ultra-thin stationary scanner that can be installed anywhere

UR21

Scanner

RF TAG

Interface

USB/RS-232C/LAN

[Components]

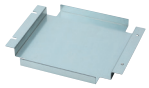
UR21-MR-01
- Controller(URCT-M21)
- Antenna(URAN-R2)
- Antenna cable (between antenna and controller)
- Rear cover (lock nuts included in package)
- Safety Precautions
- Screws for securing the antenna

UR21-MS-01
- Controller(URCT-M21)
- Antenna(URAN-S1)
- Antenna cable (between antenna and controller)
- Rear cover (lock nuts included in package)
- Safety Precautions

UR22-MR-01
- Controller(URCT-M22)
- Antenna(URAN-R3C)
- Antenna cable (between antenna and controller)
- Rear cover (lock nuts included in package)
- Safety Precautions
- Screws for securing the antenna

Options

Antenna fixture



B-URANR1-01

Antenna

URAN-R3C*
URAN-R2
URAN-S1

*: Only for UR22

Antenna cable

CBAN-CG27000/GT27-01*

Software

Control Command DLL File

This file can be downloaded for free from QB Direct on our Website.

Specification

Model			(RS-232C/USB Model) UR21-MR-01*1	(RS-232C/USB Model) UR21-MS-01*1	(LAN Model) UR22-MR-01*1
Scanner	RFID	Readable and recordable RF tag	ISO/IEC18000-63 TypeC(EPCglobal Class1 Gen2)-supported Tag		
		Transmission rate	40 kbps		
		Scanning distance*2	0~1300 mm(Avery Dennison AD-237r6), AD-229r6		0~2600 mm(Avery Dennison AD-237r6), AD-229r6 0~2200 mm(Avery Dennison AD-227)
		Output adjustment	8 levels		5.0~23.0 dBm
LED indication function			PW: power supply (green), COM (red), ANT1 (orange), ANT2 (orange) 4 total		
Interface			RS-232C(D-SUB 9P), USB(mini USB B Type)		LAN(RJ45), USB(mini USB B Type)
Power	Power supply		Custom AC adapter(100 V)		
	Current consumption		1300 mA MAX(excluding inrush current)		
Operating temperature			0~40°C		-5~50°C
Dimensions			Controller : 90 × 108.5 × 31 mm / Antenna : 200 × 200 × 17.5 mm		
Weight			Controller : Approx.130 g Antenna : Approx.360 g	Controller : Approx.130 g Antenna : Approx.250 g	Controller : Approx.130 g Antenna : Approx.400 g
Supported countries			EU, Australia	EU, Australia, China, USA, CANADA, Taiwan, Thailand, Hong Kong, Korea, Singapore, Indonesia, Vietnam, Malaysia, Phillipines, Russia	EU, China

*1: Do not connect antennas, controllers, and cables that are not specified by DENSO WAVE.The use of such antennas, controllers, and cables may result in violation of the Radio Act; the user may be punished under the act. *2: The communication distance differs depending on the target tag. The communication distance is subject to change depending on the conditions in the actual environment.

RFID Handy scanner

SP1

High-speed reading, RF tag reading distance*1
Approx.8m 1W high-output handy scanner

Scanner

1D Codes / 2D Codes / RF TAG

Weight

Approx.400 g

Interface

Bluetooth®

Robustness

Protection Class IP 54

Drop Resistance: Up to 1.5 m

Features

- **With the new scanning method (AutoLinkProfile), Improved scanning performance. Reduce stocktaking time by 50%*2**
- **RF scanning distance*2 Approx. 8 m**
- **Easy connection to smart devices**
- **Supports Android™ and iOS (MFi certified)**

*1: Settings restrictions may apply for certain countries and functions. The scan distance shown is a reference value and it may vary accordingly, depending on the actual environmental conditions. Evaluation condition = Avery Dennison AD-229r6
*2: Comparing the scanning time for 5,300 tags between the previous SP1 and the next-generation. The results are based on our own test and not guaranteed.

[Components]

•Device •Hand strap •Operation guide

Product Configuration

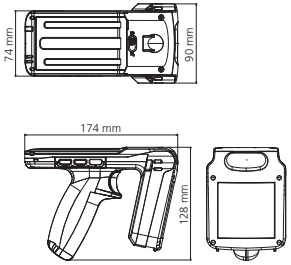
[Device] + [Battery] + [Communication Unit]

SP1-QUBi

BT-SP1LA-C (Standard battery + battery cover)
BT-SP1L-C (High-capacity battery + battery cover)

CU-SP1A (USB)

Dimensions



Options

Communication Unit — **CU-SP1A**

4 serial battery rechargers — **CH-1804** (for Standard battery), **CH-SP104A**[*1] (for High-capacity battery)

4 serial unit rechargers[*2] — **CH-SP1L4**

USB direct Cable — **CBSP-US2000/4**

Charging cable for BHT-1800[*3] — **CBBHTUS500/C18-4A**

Attachment — **EA-SP1-A1800**, **EA-SP1-AM80**

Universal Adapter (Quad Lock®is available) — **EA-SP1-AS**

Quad Lock® — **QLA-UNI-2**

Shoulder strap[*4] — **SBSP1**

Model			CU-SP1A	CH-1804	CH-SP104A*1	CH-SP1L4*2	CH-SP1L4	CBBHTUS500/C18-4A*3
Communication unit			USB 2.1 Full Speed conformant	—	—	—	USB 2.1 Full Speed compatible	—
Charging unit	Charging time	Main unit charging	3.5/7 hours	—	—	Approx.3.5/7 hours	—	Depends on the connected supply current
		Battery cartridge	4/8 hours	Approx.4 hours	Approx.8 hours	—	—	—
Dimensions			158×110×85 mm	135×110×65 mm	135×110×65 mm	141×464×90 mm	2 m	50 cm
Power Supply			AC adapter	AC adapter	AC adapter	AC adapter	Supply from connected device	Supply from connected device

*1: does not charge BT-SP1LA-C *2: Does not include smart device charging function. *3: Does not support USB interface *4: The attachment cannot be mounted or dismounted when the shoulder strap is attached to the SP1

Software [P.69-81]

Development/kitting/operation tools

DENSO SP1 SDK for Android/iOS/Xamarin* RF Edge (Please see page [P.80] for details.)

*Please refer to the manual included with the SDK for application development.

Specification

Model				SP1-QUBi
Scanner	RFID	Readable and recordable RF tag		ISO/IEC 18000-63 TypeC(EPCglobal Class1 Gen2)-compatible Tags
		Scanning speed*1		700 scans/second
		Scanning distance*2		Approx.8 m
		Output adjustment		10 dBm to 30 dBm
	Scanner	Type		Area sensor
		Readable codes	2D Codes	QR Code,Micro QR Code,SQRC,PDF417,Micro PDF417,MaxiCode,DataMatrix(ECC200), GS1 DataBar Composite(EAN.UCC Composite)
			1D Codes	EAN-13/8(JAN-13/8),UPC-A/-E,UPC/EAN(With add-on), Interleaved 2 of 5, Codabar(NW-7),CODE39,CODE93,CODE128,GS1-128(EAN-128),GS1 DataBar(RSS)
		Minimum resolution	2D Codes	0.167 mm
			1D Codes	0.125 mm
		PCS value		0.3 or greafter
		Elevation/tilt angle		±50°
		Scan confirmation		Blue/red 2-color LED,buzzer
Transmitter unit	Bluetooth			Bluetooth Ver.2.1+EDR Standard Class2
	Profile			SPP, SPP (iOS)
	Cradle			USB
Power supply	Main battery			Lithium-ion battery
	Operating time*3	Standard battery		Approx.3 hours
		High-capacity battery		Approx.6 hours
Internal				80,000 RFID tags, 1,000 barcodes
Environmental requirements	Operating temperature*4			-20~40°C
	Protection rating			IP54
	Drop resistance*5			30 drops from 1.2 m onto concrete(5 times on each of 6 faces).1.5m
EMC standerd				VCCI ClassA
Weight				Approx.400 g(with standard battery);Approx.450 g(with high-capacity battery)
Supported countries				Japan

*1: Scannung speed is a reference value and varies depending on the actual operating environment. *2: Scanning distance is a reference value and varies depending on the actual operating environment. Communicatino disfance varies depending on the actual tags. Evaluations are based on the Avery Dennison AD-229r6. *3: Reference values using DENSO WAVE conditions at room temperature.May vary depending on the actual operting conditions. *4: 0°C to +40°C for charging.Operation between -10°C and -20°C possible only using high-capacity battery.Operation apply between -10°C and -20°C and between 40°C and 50°C. *5: Test figures at room temperature. Do not constitute guaranteed values.

UR30 SERIES

Portable and stationary RFID

UR31

[Components]

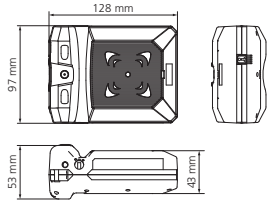
Battery-powered model
- Device • Hand strap • Battery cover
- Operation guide

*Battery not supplied with product

Power cable model
- Device • Hand strap
- External power adaptor
- Operation guide

*Power cable not supplied with product

Dimensions



Scanner

RF TAG

Weight

Approx.300 g

Interface

Bluetooth®

Robustness

Drop Resistance: Up to 2.0 m

Features

- **Capable of wide-area mass scanning RF tags from a distance of approximately 2.5 m**
- **Allows hand-held or standalone use.**
- **Operates at temperatures between -20°C and 50°C.**
- **Choice of power cable and battery-powered models**

Software

Software for setting

UR30 Setting BA Setting

Product Configuration

[Device]	+ [Battery]	+ [rechargers]	+ [Bluetooth Communication Unit]
UR31-MC-01	**BT-110L**	**CH-UR31**	**BA20-RU**

[Device]	+ [Power cable]	+ [Bluetooth Communication Unit]
UR31-MP-01	**CBUR-PS3000/ 3-NC-01**	**BA20-RU**

Options

Device charger: **CH-UR31**

Communication unit: **BA20-RU**

Model			CH-UR31	BA20-RU*1
Communication	BA↔Host		—	RS-232C/USB*2
	Scanner↔BA		—	Bluetooth Ver.2.1
Charging	Charging time	Unit	12 hours	—
Power Supply			AC adapter	Supplied from the connection target

*1: This product has a built in wireless system based on Bluetooth Wireless Technology. *2: Supports both USB keyboard interface and USB-COM interface. Please use USB-COM interface mode for configuration.

Specification

Model			(Battery model) UR31-MC-01	(Power cable model) UR31-MP-01
Scanner	RFID	Readable and recordable RF tag	ISO/IEC18000-63 TypeC(EPC global Class1 Gen2)-supported Tag	
		Transmission rate*1	Approx.2.5 m	
		Scan confirmation	Visual (3 color LED), acoustic (signal sound)	
Communication Interface	Interface		Bluetooth Ver.2.1+EDR based Class2	
	Profile		SPP	
Power	Power supply		24V DC +10%/-15%	Lithium-ion battery
	Operating time		—	28 hours*2/12 hours*3
Environmental requirements	Protection rating		IP55	
	Drop resistance*4		2.0 m×6 times drop on concrete floor	
	Operating temperature*5		-20~50°C	
Weigh(excl. batteries)			Approx.300 g (excl,cable)	Approx.350 g (including ,battely)
Supported countries			Japan	

*1: The communication distance varies according to the target tag. The communication distance is subject to change depending on the conditions in the actual environment. *2: Reading bar codes once every five seconds. *3: Bluetooth:RFtag scanning:standby=1:2:6. *4: Result obtained in a test under regular temperature is shown and not meant as a guarantee. *5: 0 to 40°C during charging.

SE1-BUB-C

Pocket RFID

[Components]

- Device • Operation guide

* Rechargeable Ni-MH batteries (eneloop) are not included in the package.
*BA20-RU/BA11-RKU is sold separately.

Scanner

1D Codes RF TAG

Weight

Approx.115 g*

*With thin battery

Interface

Bluetooth®

Features

- **Specified low-power model doesn't require license registration for ease of deployment and management.**
- **Allows target scans from 3 cm, even with RFID.**
- **Compatible with eneloop® rechargeable batteries**

Software

Software for setting

Scan Tune App BA Setting

Options

Single device charger	Four-device charger	Hand strap	Neck strap	Silicone cover		Communication Unit
CH-SE11	CH-SE14	HSSE1	NSBHT-1300	Silicone cover for SE1 series (Clear)	Silicone cover for SE1 series (Black)	BA20-RU

Model			CH-SE11	CH-SE14	BA20-RU*1
Communication	BA↔Host		—	—	RS-232C/USB*2
	Scanner↔BA		—	—	Bluetooth Ver.2.1
Charging	Charging time	Unit	11 hours		—
Power Supply			AC adapter		Supplied from the connection target

*1: This product has a built in wireless system based on Bluetooth Wireless Technology. *2: Supports both USB keyboard interface and USB-COM interface. Please use USB-COM interface mode for configuration.

Specification

Model			SE1-BUB-C
Scanner	RFID	Readable and recordable RF tag	ISO/IEC18000-63 TypeC(EPCglobal Class1 Gen2)-supported Tag
		Transmission rate	40 kbps
		Scanning distance*1	30 mm
	Scanner	Reading system	Advanced scan plus(CCD)
		Readable codes	EAN-13/8(JAN-13/8), UPC-A/E, UPC/EAN(With add-on), Interleaved 2 of 5(ITF), Codabar(NW-7), CODE32, CODE39, CODE93, CODE128,GS1-128(EAN-128), MSI, Plessey, GSI DataBar(RSS)
		Minimun resolution	0.125 mm
		PCS value	0.3 or more
		Slope angle/elevation angle	±50°
		Scan confirmation	Visual (3 color LED), acoustic (signal sound)
Communication Interface	Interface		Bluetooth Ver.2.1+EDR based Class2
	Profile		SPP, HID
Power	Power supply		eneloop×2
	Operating time		12 hours*2
Environmental requirements	Protection rating		IPX2
	Drop resistance*3		1.2 m×6 times drop on concrete floor
	Operating temperature*4		-5~50°C
Weigh(excl. batteries)			Approx.115 g
Supported countries			Japan

*1: The communication distance varies according to the target tag. The communication distance is subject to change depending on the conditions in the actual environment. *2: Reading bar codes once every five seconds. *3: Result obtained in a test under regular temperature is shown and not meant as a guarantee. *4: 0 to 40°C during charging.

E-paper tag NEW

Combining the RFID's feature which automates read/write with visibility of paper label.

Manufactured by:Netronix.inc.

Interface

UHF

Display

2.9 inch Monochrome LCD

Robustness

Protection Class IP 54

Features

- **Rewritable with UHF band RFID equipment.Easily rewritable with our RFID scanner**

- **Battery-less, so no loss of displayed information due to battery failure during operation**
- **Semi-permanent retention of display information**

Examples of Use

- Optimizing/ Automating replacement of slips.
- Reducing use of papers for slips.

Target model

[RFID scanner]

SP1, UR50, UR40

Specification

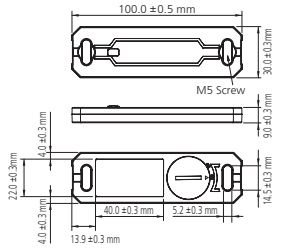
Band		UHF
Frequency		It varies by country.
Display		2.9 inch(296 x 128dot)
Display colors		Black and White
Communication distance	Inventory	Approx. 160cm *This is a test values and distance varies by the manufacturer of RFID scanners. *This is a test value obtained under room temperature conditions. It is not a guaranteed value.
	Update Image	Approx. 60cm *This is a test values and distance varies by the manufacturer of RFID scanners. *This is a test value obtained under room temperature conditions. It is not a guaranteed value.
Panel's life		1,000,000 times
Memory		EPC(UII) : 480bit(60byte) User area : 61440bit(7680byte) *User can use 32768bit(4096byte) while image updating.
Protective class		IP54
Dimensions		103(W)× 46(H)×6.6(D) mm
Wight		Approx. 35g

Navigation TAG® NEW

LED-equipped UHF-band RF tag Lights up what you're looking for

Manufactured by：Securitag Assembly Group Co., LTD

Dimensions



Interface

UHF

Operational time

100 days*

(in a case where a cycle, in which lighting is on for one second and off for 59 seconds, isrepeated 1440 times per day)

*Operational time is a reference value measured under room temperature and variesdepending on the actual operational conditions.

*The specification value is obtained using Panasonic's button cells.

Robustness

Protection Class Equivalent to IP53

Features

- **Equipped with a high-brightness LED. You can visually recognize the LED emission in a dark place, such as a warehouse,or even under lighting**
- **You can turn on the LED from a distance of up to 8m*1**
- **The tag is translucent, and you can recognize the light even from the side**
- **Being highly durable*2, you can use it repeatedly**

*1:The reading distance is a reference value when using SP1 scanner and may differ depending on the actual environmental conditions.
*2:Drop durability on concrete from a height of 1.2 m (20 tags tested)

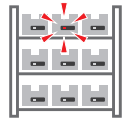
Software

Development/operation tools

DENSO SP1 SDK for Android*

*: Application Development Support Kit forNavigationTAG is included in the SDK for SP1
*: with simplified app.

Examples of Use



- Shelve and box searches

- Basket cart searches

- Checked baggage searches
- Digital picking system

Target model

[RFID scanner] **SP1**

[Handheld terminal with Android™] **BHT-M80. BHT-1800**

Specification

Model	**Navigation TAG®**
Tag communication method	UHF
Frequency range	860~960MHz *Global band
Power supply	Battery (button cell: CR2032)
Operational time	100 days (in a case where a cycle, in which lighting is on for one second and off for 59 seconds, is repeated 1440 times per day) *Operational time is a reference value measured under room temperature and varies depending on the actual operational conditions. *The specification value is obtained using Panasonic's button cells.
Writing/reading distance	Up to 8 m *The reading distance is a reference value calculated by using SP1 with the tags, with the actual distance depending on operational conditions.
Operational temperature	-30~60°C *Please use the product within the operational temperature range of SP1 (-20 to 40°C).
Protection rating	Equivalent to IP53
Drop durability	1.2 m x once (Dropped on a concrete floor) (20 tags tested)
LED color	Red
Weight	Approx.26g (including the battery)
Material	Polycarbonate
How to fix	Screws(M5), double-sided tape, bundling bands *not included in the product package

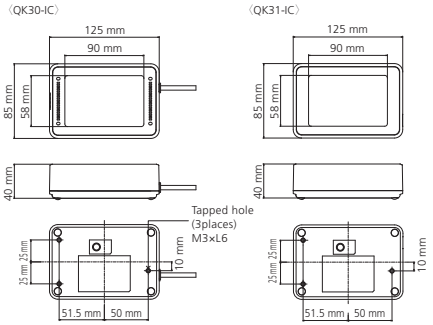
IC Card reader/writer

QK30-IC

IC cards + mobile QR Code®

[Components]
•Device •Operation guide

Dimensions



Scanner

1D Codes 2D Codes IC CARD

Interface

USB

Features

Supports a wide range of scanning target form factors for an expanded range of applications

NFC compatible

Options

Silicone cover

Silicone cover for QK30Series(Blue)*
Silicone cover for QK30Series(Black)*
Silicone cover for QK30Series(Clear)*
*: QK31-IC does not support

Software

Software for setting
QR_kbif Sccanner Setting 2D SQRC Setting

IC card-related
IC card device development Support library for Windows

Specification

Model			(Stationary type) **QK30-IC(N)**	(Built-in type) **QK31-IC(N)**
Scanner	IC card	Used regulation	Guidanced reading and writing transmission equipment	
		Used card	FeliCa(Standard/Lite/Plug(NFC Dynamic Tag)), MIFARE(Classic/Ultralight/Ultralight C/DESFire/DESFire EV1) ISO/IEC 14443 Type A/B	
	Scanner	1D Codes	EAN-13/8(JAN-13/8), UPC-A/E, Interleaved 2 of 5(ITF), Codabar(NW-7), CODE39, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS), UPC/EAN(With add-on), CODE93, Standard 2 of 5(STF)	
		2D Codes	QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF, DataMatrix, Aztec, GS1Composite, MaxiCode	
Communication	Method		USB 1.1(COM) (for IC cards)USB 1.1(COM/HID) (for 2D codes/barcodes)	
	Connector type		USB connector Type A×2(integrated with cables)	USB connector Type B×2(detachable from cables)
	Cable		2 m	1.4 m (optional)
Power Supply	Electric supply		Supply from the connection*1	
Environmental Performance	Protection Class		IPX2	—
	Operating temperature		-5~50°C	
	Operating humidity		10~90% RH(no dew formation or freezing)	
Weight			Approx. 300 g(incl. cable)	Approx.170 g(excl. cable)

*1: Depending on the USB interface that the scanner is connected to (PC type and/or the USB-HUB), the USB interface may not power the scanner.

OCR Handheld terminal

OCR-Capable Android™ based hand held terminal

Smooth scanning of diverse range of characters

A "character recognition" function can be added by purchasing an OCR license (BHT OCR).

BHT-M80
See [P.13] for details.

BHT-M70
See [P.15] for details.

BHT-M60
See [P.17] for details.

Software

BHT OCR (fee required)

OCR See [P.72] for details.

OCR Fixed type scanner

FC1

Quick scanning of passport information and images

[Components]
•Device
•Operation guide

Scanner

1D Codes 2D Codes OCR

Interface

USB

Features

Streamlines the task of photocopying passports at accommodation facilities

Software

Software for setting
QR_kbif Scanner Setting OCR
SQRC Setting

Specification

Model			Stationary type **FC1-QOPU**
Scanner	Readable codes	2D Codes	QR Code, micro QR Code, SQRC, PDF417, micro PDF, Aztec, GS1 Composite
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/C, UPC/EAN(With add-on), Interleaved 2 of 5 (ITF), Standard 2 of 5 (STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)
		OCR-B font	Machine readable passport (MRP) in conformity with ICAO Document 9303, Part 1, Volume 1 (passport OCR 44 characters x 2 lines) Machine readable visa format-A (MRV-A) in conformity with ICAO Document 9303, Part 2 (full-size visa OCR 44 characters x 2 lines)
	Minimun resolution	2D Codes	0.25 mm
		1D Codes	0.18 mm
	Reading Sight		85 mm×55 mm
	Scanning reference position		0~5 mm*1
	Scan confirmation		Visual (1 color LED)
Communication interface	Interface		USB 2.0 conforment (COM, HID)*2
	Connector type		USB connector mini B
	Cable		Selling separately
Power	Power Supply		Supplied from the connection target*3
Environmental Performance	Protection rating		IPX2
	Operating temperature		0~50°C
	Operating humidity		10~90% RH (no condensation or frost)
Dimensions			135(W)×112(D)×99(H) mm
Weight(excl. cable)			Approx.315 g

*1: Height from the dust proof plate. In the case of scanning 1D/2D Codes and OCR-B front. *2: Two interfaces are supported (USB keyboard and USB-COM). To use the scanner in the USB-COM interface mode, download the USB driver from our website (free of charge). *4: Depending on the USB interface that the scanner is connected to (PC type and/or the USB-HUB), the USB interface may not power the scanner.

OCR Fixed type scanner

QK30-OP-U

Instantaneous scanning of passports

[Components]
- Device
- EA-QK30 (Attachment)
- Operation guide

Scanner

1D Codes / 2D Codes / OCR

Interface

USB

Features

Outstanding scanning performance simplifies duty-free procedures

Software

Software for setting

QR_kbif ▮Scanner Setting 2D ▮SQRC Setting

Specification

Model			Stationary type **QK30-OP-U**
Scanner	Readable codes	2D Codes	QR Code, micro QR Code, SQRC, iQR Code, PDF417, micro PDF, DataMatrix, Aztec, GS1 Composite, MaxiCode
		1D Codes	EAN-13/8(JAN-13/8), UPC-A/C, UPC/EAN(With add-on), Interleaved 2 of 5 (ITF), Standard 2 of 5 (STF), Codabar(NW-7), CODE39, CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS)
		OCR-B font	Machine readable passport (MRP) in conformity with ICAO Document 9303, Part 1, Volume 1 (passport OCR 44 characters x 2 lines) Machine readable visa format-A (MRV-A) in conformity with ICAO Document 9303, Part 2 (full-size visa OCR 44 characters x 2 lines)
	Minimun resolution	2D Codes	0.25 mm
		1D Codes	0.18 mm
	Scanning reference position		0 mm*1/7 mm*2
	Scan confirmation		Visual (3 color LED) and acoustic (signal sound)
Communication interface	Interface		USB1.1 conformant(COM, HID)*3
	Connector type		USB connector(Atype)
	Cable		1.5 m
Power			Supplied from the connection target*4
Environmental Performance	Protection rating		IPX2
	Operating temperature		-5~50°C
	Operating humidity		10~90% RH(no condensation or frost)
Dimensions			131(W)×94(D)×81(H) mm
Weight (incl. cable and attachment)			Approx.350 g

*1: Height from the top of attachment. In the case of scanning OCR-B font. *2: Height from the dustproof plate. In the case of scanning 1D/2D codes. *3: Two interfaces are supported (USB keyboard and USB-COM). To use the scanner in the USB-COM interface mode, download the USB driver from our website (free of charge). *4: Depending on the USB interface that the scanner is connected to (PC type and/or the USB-HUB), the USB interface may not power the scanner.

Information on maintenance service

Free-of-charge warranty service

DENSO WAVE provides a free-of-charge warranty period for each product.
Usually, the warranty period for a handy terminal is one year and that for scanners ranges from one to five years according to the device.

Service name	Service description	Repair period	Cost	Contract period
Free-of-charge warranty service	During the warranty period, if a product develops problems under normal conditions of use, DENSO WAVE will repair it free of charge.	Within 10 business days	Free of charge	1 to 5 years Varies according to the device.

Warranty period extension service

Although the warranty period for a handy terminal is usually one year, it can be extended to three years depending on the product by making a prior application via the website.

Applicable products for warranty period extension from one to three years

BHT-M80/M70/M60/S40/S30/1800/1700/1500/1400/1300

* Prior application via the website is required.

Apply at the link below.

https://www.denso-wave.com/en/adcd/member/warranty/index.html

Bluetooth® Communication unit

BA20-RU

Target model:
AT27Q-SB/SE1/ SE1-BUB-C/SF1/Wearable SF1/
UR31-MC-01/GT20B-SB-V2/GT20Q-SB-V2

Model		BA20-RU
Transmission interface	BA ⟷ Host	RS-232C/USB*1
	Scanner ⟷ BA	Bluetooth Ver2.1

●This product has a built in wireless system based on Bluetooth Wireless Technology.
*1: Supports both USB keyboard interface and USB-COM interface. Please use USB-COM interface mode for configuration.

[Setting details]

*Please select one interface type.
*Only needs to connect a non built in Bluetooth device.

RS-232C set

■Transmission unit
■RS-232C Cable (CBBA-RS2000/9)
■ACadapter (AD2-1005/3000)

RS-232C set (built-in charger)*1

■Transmission unit
■RS-232C Cable (CBBA-RS2000/9-1)

K/E set

■Transmission unit
■Keyboard I/F cable (CBBA-KYS2000/6)

USB-COM set

■Transmission unit
■USB cable (CBBA-US2000/4)

*1: The AC adaptor is not included. Please make sure to order the AC Adopter when using the RS-232C interface cable.

Download the USB driver from the DENSO WAVE QB direct web site.

Software Lineup

●: Supported

Category			Software	Page	Summary		BHT-M80	BHT-M70	BHT-M60	BHT-1800	BHT-1700	BHT-1600	BHT-S40	BHT-S30	BHT-1500	BHT-1300 BHT-OS	BHT-1400	BHT-1300 Windows	QK30 -IC	SP1
Handheld terminal	Android model	Development/ kitting/ operation tools	Software Development Kit	P.71	The development support kit supports the development of applications for BHT terminals that run on Android		●	●	●	●	●	●								
			BHT Booster	P.71	Handy terminal work app development tool for easy creation and customization of work apps		●	●	●	●	●									
			BHTLink	P.72	Communication application program and library for file transfers between Android BHT and PC		●	●	●	●	●	●								
			BHT OCR	P.72	Smooth scanning of diverse range of characters. Optical character recognition (OCR) tool for handy terminals equipped with Android OS		●	●	●											
		Terminal management/ maintenance tools	BHT DMS	P.73	Terminal management system to support users from kitting to operations management		●	●	●	●	●	●								
			BHT Remote	P.74	Software to remote-control an Android BHT on a PC		●	●	●	●	●									
			BHT Security Package	P.74	Package for complete elimination of Android security risks		●	●	●	●	●									
	BHT-OS model	Development/ kitting/ operation tools	BHT-BASIC4.0 Development Pack	P.75	A software package required for the development of BHT applications								●	●	●	●*1				
			BHT-C Software Development Kit	P.75	A tool kit to make it possible to develop applications for BHT models in C											●				
			BHT Browser for S series	-	Browser software for using wireless BHT as a web clientw								●	●						
			BHT Browser													●				
			BHT-BASIC4.0 Transfer Utility(EXE)	P.75	Communication between the BHT and your PC (downloading and uploading) is simple and easy with a botton								●	●	●	●				
			BHT-BASIC4.0 Transfer Utility DLL Pack	P.76	DLL for communication between BHT and PC can be called from Windows application								●	●	●	●				
			BHT-BASIC4.0 Remote Debugger	P.76	Stepwise monitoring tool which greatly reduces debugging work in developing BHT software								●	●	●	●				
			BHT Setting	P.76	Setting various BHT parameters form a PC								●	●	●	●				
			BHT Term Emulator	P.77	Software for using a wireless BHT terminal as a terminal for an online system								●*2	●*2		●*2				
		Terminal management/ maintenance tools	BHT Manager	P.77	Software for Operation Support after the Introduction of BHT								●*2	●*2		●*2				
	Windows model	Development/ kitting/ operation tools	Software Development Kit	P.78	Development support kit for supporting application development for devices with Windows-OS												●	●		
			Simulator	P.78	Tool that allows application development and debugging on a PC												●*3	●		
			Remote desktop Plug-in	P.78	A plug-in for controlling BHT terminals at will in the remote desktop environment												●	●		
			Web browser Plug-in	P.79	A plug-in for controlling BHT terminals at will in the web browser environment												●	●		
		Terminal management/ maintenance tools	Version Manager	P.79	Application for automatically updating files on BHT terminals with Windows-OS												●	●		
			BHT DMS	P.73	Terminal management system to support users from kitting to operations management												●	●		
RFID	Android model		RF Edge	P.80	Verification application to support RFID adoption															●
IC card model	Windows model		IC card device development support library for Windows	P.80	Reduce the development period of IC card devices														●	
OCR model	Android model		BHT OCR	P.72	Smooth scanning of diverse range of characters. Optical character recognition (OCR) tool for handy terminals equipped with Android OS		●	●	●											
	Windows model		Application package for OCR intraduction	P.81	Application for OCR scanning test and simplified OCR operation to support OCR introduction												●*4			
Code generation application				P.81	Application that allows generating of 1D and 2D Codes															

*1: BHT-1306QWB-H does not support the simulator library.
*2: Support only for Wireless LAN model.
*3: Some functions are not supported.
*4: Support only for BHT-1461QWB-CE-O.

Development/ kitting/ operation tools

Application development support kit (SDK)

Android
BHT-OS
Windows

The development support kit supports the development of applications for BHT terminals that run on Android™

•The SDK, OS, tool, and samples are downloadable from our support page.

Details of SDK

- OS: OS for running the SDK
- SDK: Library for developing the BHT applications (Java, Xamarin)
- Sample program: Sample program for developing BHT applications (Java, Xamarin)
- Application
  OCR application program pre-installed in the product*1
- Tools
  WMDS setup file (terminal setup tool) for PCs*1
  Bluetooth master connection tool
  SQRC Setting connection manual
  BHT Remote PC application manual

Items that can be controlled by the library

- Barcode and 2D code scanning and buzzer/vibrator notification control (Java, Xamarin)
- SAM service control (Java)*1
- Key input control*2
- OS update function
- Power management (shutdown, restart)
- SNTP setup
- System setup(Date and Time Setting, Backlight setting etc.)
- Device Settings(Touch panel enable/disable)
- BHT Setting(For kittng)
- OCR

Sample programs (examples)

- For controlling the scanner
- For controlling devices (device information indication, system setup, camera control, printer control)
- For controlling Bluetooth (Bluetooth SPP master/client operation)
- Sample programs for controlling wireless LAN (Java, Xamarin)*3
- BHTSDK For API testing*4
- For Kittng*4
- For OCR control

*1 BHT-1600 *2 BHT-1800, 1700 only *3 BHT-1800, 1700, 1600 only *4 BHT-M80, M60 only

Supported BHT models BHT-M80, M70, M60, 1800, 1700, 1600

Downloadable from QBdirect on our website free of charge

Regarding the supported OS, the system requirements are different depending on your development environment. Please refer to the official websites of the respective companies. (recommended environment: Android Studio, Xamarin for Visual Studio)

The above information is as of May, 2022. Please refer to the following web site to confirm the latest information. ▶ www.denso-wave.com/en/index.html

Development/ kitting/ operation tools

BHT Booster

Android
BHT-OS
Windows

Handy terminal work app development tool for easy creation and customization of work apps

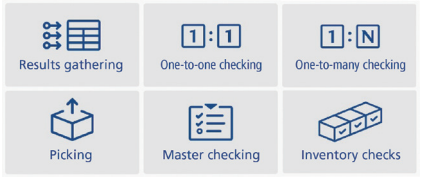
•BHT Booster comes with 6 pre-installed templates based on the work carried out in the workplace, allowing work apps to be created and used immediately.
•Work apps can also be customized to suit how the BHT is used and the situation in the workplace, making it the perfect solution for customers "wishing to adopt terminals and work apps with as short a development period as possible and at minimal cost", and customers "developing Android™ apps for the first time".

1. Ready for use straight from the box
•6 work menus have been prepared based on work carried out in the workplace.
•Work can be created and started immediately by starting a terminal app, and selecting a prepared template.

2. Operational efficiency achieved by anyone with a single BHT
•No development computer or Android app development experience necessary. Work apps can be created easily in the workplace, allowing tests to be carried out immediately from the handy terminal. Trouble-free kitting can also be carried out with ease by distributing created work settings files.

3. Further productivity improvements by linking with other software
•By using in conjunction with "BHTLink" software for transferring files between the handy terminal and computer, or the "BHT DMS" handy terminal batch management system, master and results files can be sent and received even easier.

[Work template list]



[Operation image]

Supported BHT models BHT-M80, M70, M60, 1800, 1700

Free

Development/ kitting/ operation tools

BHTLink

Android
BHT-OS
Windows

Communication application program and library for file transfers between Android™ BHT and PC

•Files can be transferred via 4G or Wi-Fi to reduce man-hours required to develop wireless communication programs.
•Supports communication via LAN cradle and USB cradle.
•Ready-to-use applications and an embeddable library are included.

[System configuration]

PC application image

Supported BHT models BHT-M80, M70, M60, 1800, 1700, 1600

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

One server license is required for each PC.
In addition, as many client licenses as number of BHT units used are required. (Some exceptions apply)
* Unlimited licenses are also available (only partially supported)

*Please contact us for details.

Development/ kitting/ operation tools

BHT OCR

Android
BHT-OS
Windows

Smooth scanning of diverse range of characters. Optical character recognition (OCR) tool for handy terminals equipped with Android™ OS

•This character recognition tool helps streamline and reduce errors when checking expiry dates in distribution centers, and when checking slips with characters at manufacturing and logistics sites.

1. Scanning of up to 50 characters possible at a time
•Even long character strings prone to mistakes with visual checks can be scanned accurately.

2. Scanning of 2 rows possible at a time*
•Information printed over two rows can be scanned at one time. Work can be carried out efficiently even when necessary to check multiple pieces of information.
* Scheduled for support in March 2022 with OS update for BHT-M60, M70, and M80.

3. Extensive range of functions to support smooth scanning
•Up to 100 Kanji, special symbols, or special characters can also be registered as images.
•Equipped with format registration function which automatically distinguishes character types simply by scanning a character string.
•Equipped with "View Finder" function capable of targeting nearby character strings while viewing the screen.

Package/form expiry dates, part numbers, and all types of numbers such as the following can be scanned.

Food/medicine expiry dates (dates printed on paper/cardboard, etc.)

Delivery invoices (printed section)

Other forms

7-segment displays such as those on scales

Supported BHT models BHT-M80, M70, M60

Require 1 license for one BHT. One license is available for one product.

Terminal management/ maintenance tools

BHT DMS (Device Management System)

Android
BHT-OS
Windows

The terminal management system supports the user from setup to operation management.

- Integrated management via the network reduces the workload of the system administrator.
- The real-time monitoring of terminal information enables collective management of terminals.

[Possible usage]

Case 1: Periodic update of the work system

Example: Applications and work data are distributed from the administration headquarters to terminals in advance. The terminals can be updated concurrently before work on the day of system switchover.

Case 2: Emergency troubleshooting during operation

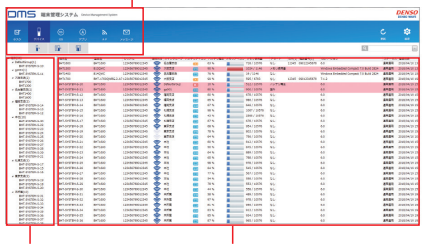
Example: Data can be distributed remotely from the administration headquarters in the event of an emergency. This enables on-site restoration of the work system and data.

- On-premises version two models (Lite and Standard) are available depending on the intended usage.

Function	On-premises		The cloud
	Lite	Standard	
Registering devices information	○	○	○
Application, OS Ver management	○	○	○
Group management	-	○	○
Communication	-	○	○
Security	-	○	○
System logging	○	○	○
Operational application linkage	○	○	○
Alert	-	○	○
Notification email	-	-	○
Remote control*1	○	○	-
Multiple administrator use	-	-	○
LTE line use	○*2	○*2	○

＊More than 1000 terminals must be managed with separate servers.
＊1: Requires "BHT Remote" license.
＊2: Requires a global IP for the server; IPv6 not supported or use of a separate SIM is required.

[Image of the main screen]

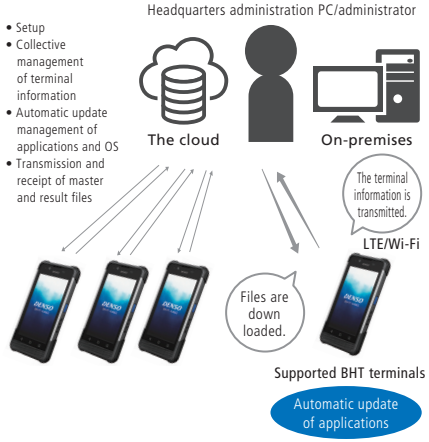


Functions are assigned to respective tabs for easy identification.

Terminals can be managed by group at each facility.
* This does not apply to the Lite version.

The table shows the terminal operation status (e.g., terminal name, date and time of last update, telephone number, remaining battery life).

[System Architecture]



- Supported BHT terminals

Terminal name	Model				On-premises	The cloud
BHT-M80	BHT-M80-QW	BHT-M80-QWG			○	○
BHT-M70	BHT-M70-QW	BHT-M70-QWG			○	○
BHT-M60	BHT-M60-QW	BHT-M60-QWG			○	○
BHT-1800	BHT-1800QWB-A7series	BHT-1800QWBG-A7series			○	○
BHT-1700	BHT-1700QWB-A7series	BHT-1700QWBG-A7series	BHT-1700BWB-A7series	BHT-1700QLWB-P-A7	○	○
BHT-1600	BHT-1600QWB-A6series	BHT-1600QWBG-A6series	BHT-1600BWB-A6series	BHT-1600BWBG-A6series	○	○
BHT-1400	BHT-1461QWB-CE-O	BHT-1461QWB-CE	BHT-1461BWB-CE		○	×
BHT-1300	BHT-1361QWB-CE	BHT-1361BWB-CE			○	×

On-premises /The Cloud

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64)
				10(32)

The cloud supported browsers: Google Chrome

On-premises: Require 1 license for one PC. The cloud: Require 1 license for one BHT

＊Please contact us for details.

Terminal management/ maintenance tools

BHT Remote

Android
BHT-OS
Windows

Software to remote-control an Android™ BHT on a PC

- Software to remote-control a networked Android BHT on a PC for smooth communication, higher on-site operational efficiency and reduction of burden on the management side.
- There are three modes available for real-time operational management, from which you can choose the one suitable for the intended use.

1. "Assistant Mode" to remotely support the worker

In this mode, the manager can share the operation screen with the worker, making it suitable for usage such as lectures on the operation method by an operator.

2. "Desk Top Mode" for data entry and changing settings while remaining undetected by the worker

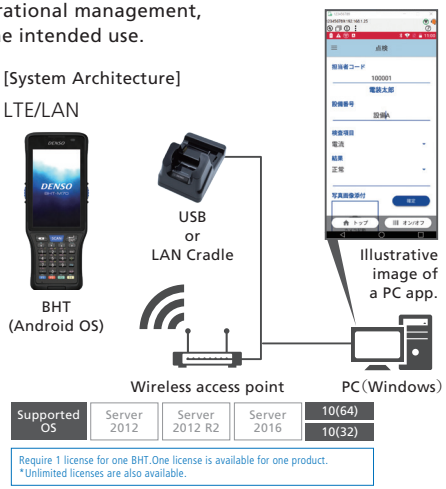
In this mode, the manager can change the password and other data while the screen is off on the worker's side, so it is suitable for updating programs and changing settings.

3. "View Mode" for constant checking of the operational situation

The screen of the handy terminal used on-site can be viewed at the control center to monitor the operational situation, and for early troubleshooting.

Supported BHT models	BHT-M80, M70, M60, 1800, 1700

[System Architecture]



Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64)
				10(32)

Require 1 license for one BHT.One license is available for one product.
*Unlimited licenses are also available.

Terminal management/ maintenance tools

BHT Security Package

Android
BHT-OS
Windows

Package for complete elimination of Android™ security risks

- This package incorporates key security functions based on handy terminal development know-how accumulated by DENSO WAVE over many years.

Dedicated terminal usage method supported with 3 applications and functions

1. Terminal functionality restriction, information leakage prevention
BHT Setting (device setting function)

- Taking photographs of confidential information with the camera, terminal hijacking from Bluetooth, eavesdropping with the microphone, and the outflow of data from USB memory devices or SD cards is prevented by restricting terminal functionality.

2. Monitoring and control of communication with unauthorized sites, etc.
BHT Firewall

- Accidental or intentional information leakage is prevented by monitoring and controlling communication. Damage caused by spoof websites or unauthorized apps is prevented by blocking communication with other than pre-set connection destinations or apps.

3. Monitoring and control of unauthorized operation
BHT Security Manager

- In addition to detecting abnormalities including behavior leading to unauthorized operation such as consecutive password entry, or unauthorized switching to developer mode, terminals can also be controlled remotely by administrators.

Supported BHT models	BHT-M80, M70, M60, 1800, 1700

All apps pre-installed on terminal!

BHT Setting　BHT Firewall　BHT Security Manager

Require 1 license for one BHT.One license is available for one product.
*Unlimited licenses are also available.

Development/ kitting/ operation tools

BHT-BASIC4.0 Development Pack

Android / BHT-OS / Windows

A software package required for the development of BHT applications

❶ BHT-BASIC4.0 Compiler

Compile a source program to BHT execute form

- Enable to compile and edit a source code by 1 button.

❷ BHT-BASIC4.0 Remote Debugger*

Debug as connecting BHT with PC by cable and simulating the execute status.

- Single line stepwise execution can be performed, and breakpoints to monitor running state can be set.
- Managing multiple application programs as one workspace can be achieved.

*BHT-800 series is not supported.

❸ BHT-BASIC4.0 Transfer Utility

- Communication between the BHT and your PC (downloading and uploading) is simple and easy with a button.

[Including]
- BHT-BASIC4.0 Compiler
- BHT-BASIC4.0 Remote Debugger
- BHT-BASIC4.0 Transfer Utility

Supported BHT models	BHT-S40, S30, 1500, 1300* (BHT-OS)

*BHT-1306QWB-H does not support the simulator library.

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

Require 1 license for one PC. One license is available for one product.

BHT-C Software Development Kit

Android / BHT-OS / Windows

A tool kit to make it possible to develop applications for BHT models in C

- Development of applications in C is newly supported while preserving the advantages of BHT-BASIC that is noted for assuring stable operation of devices. It goes without saying that high-speed processing of programs that is attainable only in C can be expected.

Supported BHT models	BHT-1300 (BHT-OS)

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

Downloadable from QBdirect on our website free of charge

BHT-BASIC4.0 Transfer Utility [EXE]

Android / BHT-OS / Windows

Communication between the BHT and your PC (downloading and uploading) is simple and easy with a button.

- The BHT application programs can be downloaded to the PC.
- Enable to upload barcode data BHT collected by text file, and download master data like name of commodity.

Supported BHT models	BHT-S40, S30, 1500, 1300 (BHT-OS)

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

Require 1 license for one PC.

BHT-BASIC4.0 Transfer Utility DLL Pack

Android / BHT-OS / Windows

DLL for communication between BHT and PC can be called from Windows application

- Communication software for data exchange between the BHT and a PC DLL (Dynamic Link Library) package to enable data transfer utilities' communication function in Visual Basic and Visual C++ environment.
- Data exchange with the BHT is achievable with a very simple program.

Supported BHT models	BHT-S40, S30, 1500, 1300 (BHT-OS)

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

Require 1 license for one PC.

BHT-BASIC4.0 Remote Debugger

Android / BHT-OS / Windows

Stepwise monitoring tool which greatly reduces debugging work in developing BHT software

- Single line stepwise execution can be performed, and brake point to monitor running state can be set. Easy debugging of programs can be achieved by checking the value of variables and the state of the stack.
- Managing multiple application programs as one workspace can be achieved.

Supported BHT models	BHT-S40, S30, 1500, 1300 (BHT-OS)

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

Require 1 license for one PC.

BHT Setting

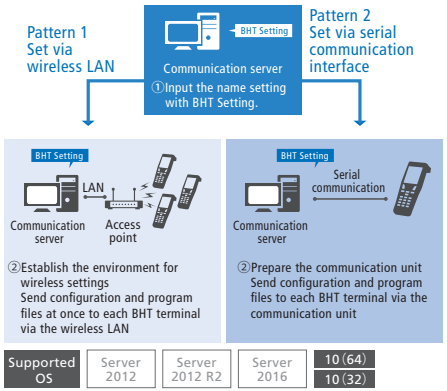
Android / BHT-OS / Windows

Setting tool for making complicated introduction work easier

- Making configuration settings and installing applications required to introduce handy terminals become easier
- Configuration setting information can be inputted on the PC and sent to BHT terminals via wireless LAN or serial communication interface.
- Settings unique to each individual device, such as IP address, are also supported.

Supported BHT models	BHT-S40, S30, 1500, 1300 (BHT-OS)

Downloadable from QBdirect on our website free of charge



Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

Software

Development/ kitting/ operation tools

BHT Term Emulator

Android / BHT-OS / Windows

Software for using a wireless BHT terminal as a terminal for an online system

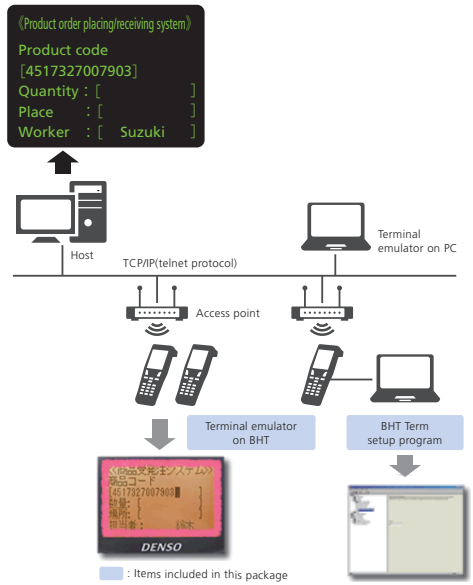
- Existing online applications can be used without any modification.
- No relay server for terminal connection is required.
- The BHT Term setup program included in the package enables easy setup depending on the usage environment.

Supported BHT models	Wireless LAN models of BHT-S40, S30, 1300 (BHT-OS)

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

One license is required for one BHT terminal. One license is available from one product.

■System configuration



Terminal management/ maintenance tools

BHT Manager

Android / BHT-OS / Windows

Software for Operation Support after the Introduction of BHT

- It is possible to automatically update the OS and applications of all BHTs operated through the LAN, distribute master data, and collect user data from your desk.
- Centralized management through the network reduces the burden on the system administrator.
- Since the software can be used by regular users, operation does not depend on the skill of the system administrator.

Required Software:
Microsoft SQL Server 2005, 2008, or 2008 R2 Express Edition, and Microsoft .NET Framework 3.5 SP1

Supported BHT models	Wireless LAN models of BHT-S40, S30, 1300 (BHT-OS)

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

One license is required for one BHT terminal. One license is available from one product.

Sample Usage: Updating the applications at all offices in the country from the headquarters (A company with 100 chain offices)

Before introducing BHT Manager		After introducing BHT Manager	
The staff visit each office, and update the applications and OS.		The staff updates the applications and OS through the company network.	
Visits	Five offices /day	Visits	Not required
Number of days required for update	20 days in total	Number of days required for update	One day in total
Assuming 50 thousand yen/day, 1 million yen + transportation expense are required for update.		With BHT Manager, update can be completed with only an operational expense of 50 thousand yen.	

Significant cost reduction

Development/ kitting/ operation tools

Software development Kit

Android / BHT-OS / Windows

Development support kit for supporting application development for BHT terminals with Windows®-OS

- A complete set of SDK, OS, tools and samples is provided on DENSO WAVE's support page.

Description of SDK	Items controlled by the library	Sample program examples
•OS OS for relevant SDK •SDK Library and sample programs for developing BHT applications •SDK_RDP Library for developing remote desktop applications •Tools Remote display application for displaying BHT screen on the PC	•Barcode and 2D code reading function •RFID control (for products supporting RFID only) •Wireless LAN communication function •3G communication control and GPS information collection (for products supporting 3G only) •Bluetooth SPP communication function •Serial communication function (YMODEM communication function) •Power OFF and reset •LED control •Backlight control •Buzzer and vibrator control •Camera control •Key input control •Compatible screen display function •OS update function	•For basic configuration settings (reading setting, buzzer/vibrator setting, OS update setting, setting for connecting with Bluetooth devices) •For socket programming •For language display •For key allocation setting (backlight, screen rotation and software input panel) •For wireless LAN connection setting •For COM communication setting •For automatic reconnection with Bluetooth devices

Supported BHT models	BHT1400, 1300 (Windows-OS)

* Since some restrictions may apply, please visit Microsoft's website for details.
https://www.microsoft.com/ja-jp/dev/support/tools.aspx

HP Downloadable from QBdirect on our website free of charge

Simulator

Android / BHT-OS / Windows

Tool that allows application development and debugging on a PC

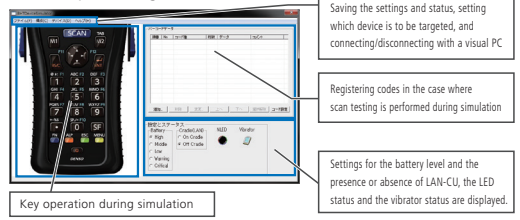
- Simulation and debugging on a PC are possible without an actual device.

Supported BHT models	BHT1400*, 1300 (Windows-OS)

*Some functions are not supported.

Require 1 license for one PC.

【Conceptual image of main screen】



Remote desktop plug-in

Android / BHT-OS / Windows

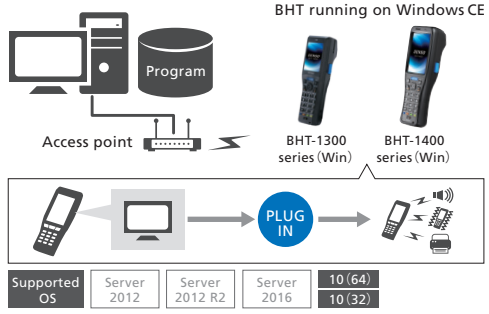
A plug-in for controlling BHT terminals at will in the remote desktop environment

- BHT local devices (e.g., barcode scanners, buzzers or vibrators) can be controlled in the Windows® remote desktop environment.

Advantages of using remote desktop
•Development is possible using Visual Studio. •Development is required only on the server side. Thus, development costs can be significantly reduced. •When updating applications, only applications on the server side need to be modified. This makes the process less time-consuming. •No information is left on the BHT side. This helps ensure security.

Supported BHT models	BHT1400, 1300 (Windows-OS)

HP Downloadable from QBdirect on our website free of charge



Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

To use the remote desktop feature, a license must be obtained from Microsoft Corporation. To purchase a license, please contact Microsoft Corporation or a dealer.

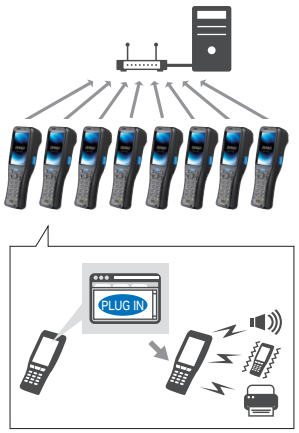
Development/ kitting/ operation tools

Web browser plug-in

Android / BHT-OS / Windows

A plug-in for controlling BHT terminals at will in the web browser environment

•The plug-in enables control of BHT local devices (e.g., barcode scanners, buzzers, or vibrators) in the web browser environment.



Advantages of using web browsers

- Systems for business operations can be easily established by using web server services, which enable excellent control of simultaneous multiple access.
- Development is possible based on HTML and JavaScript.
- When updating applications, only applications on the server side need to be modified. This makes the process less time-consuming.
- No information is left on the BHT side. This helps ensure security.
- Settings can be optimized for business operations by limiting some of the functions of Internet Explorer.

Supported BHT models	BHT1400, 1300 (Windows-OS)

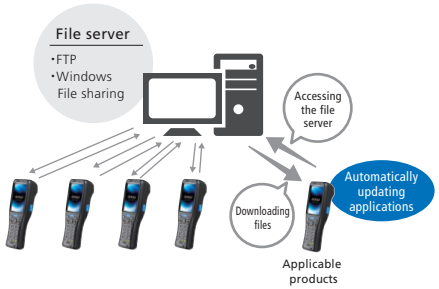
Terminal management/ maintenance tools

Version Manager

Android / BHT-OS / Windows

Application for automatically updating files on BHT terminals with Windows®-OS

•Applications, OS, master files, etc. can be automatically downloaded and uploaded by accessing the file server from each terminal.



Menu screen

File update setting screen

Main functions

- Automatic updating of applications and OS
- Automatic updating of master files
- Uploading of update logs
- Automatic periodical resetting of BHT terminals

Supported BHT models	BHT1400, 1300 (Windows-OS)

One license is required for one BHT terminal. One license is available from one product.

RFID

RF Edge

Android / BHT-OS / Windows

Verification application to support RFID adoption

•"I want to check" whether I can use RFID. "I want to check" the benefits through actual use.RF Edge is equipped with all the functions necessary for verification.

1. Extensive range of functions necessary for verification

•Menus capable of simulating actual use are also available.

Verification work menus		Work menus
1. Recommended settings	2. Tag rewriting	7. Arrival/shipment work
3. Sorting of scanning result	4. Filter function	8. Inventory check work
5. JAN conversion	6. Verification results output	9. Tag searching

2. Short time to adoption, inexpensive

•With RF Edge, there is no need to develop verification software, reducing the total cost, and shortening the time up to adoption.

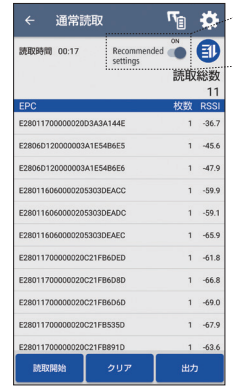
3. No expertise required

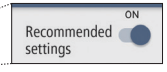
•RF Edge is equipped with the functions and recommended settings necessary for verification, making operation easy even without expert RFID knowledge.

4. Small-scale adoption possible

•Small-scale adoption is possible with a minimal initial cost. You'll see the benefits by managing small quantities of goods.

[Screen image]





Scanning environment setting complete with a simple swipe!

Also equipped with extensive range of menus capable of simulating actual use

Supported models	RFID scanner: SP1 Andorid™ terminal: BHT-1800

One license is required for one SP1. One license is available for one product.
* Unlimited licenses are also available.

IC card model

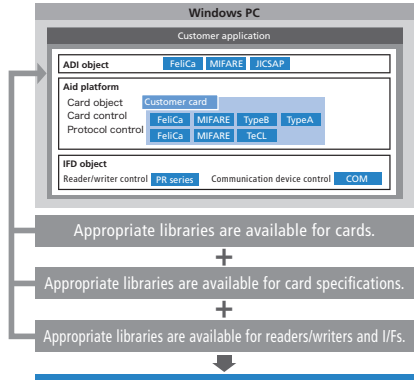
IC card device development support libray for Windows®

Android / BHT-OS / Windows

Reduce the development period of IC card devices

•Supporting for reader writer processing, various card processing, communication, encryption by library.

•Lineup 3 types IC card, FeliCa®, MIFARE®, JICSAP (TypeA/TypeB).



Supported models	OK30-IC

Supported OS	Server 2012	Server 2012 R2	Server 2016	10(64) / 10(32)

Use Maximum 5 license by 1 software. To operate reader writer, additional license is separately needed.

Software

OCR model

Application package for OCR introduction

Android
BHT-OS
Windows

Application for OCR scanning test and operation to support OCR introduction

•Test evaluation tool (free of charge)
Tool that allows evaluation of whether actual target objects can be adequately scanned and confirmation of optimum settings for OCR introduction before introduction

•Easy character string pattern setting: Character string pattern can be registered by just scanning character strings.
•Easy user dictionary setting: Special fonts, etc. can be registered.
•Support function for stable operation: Stability of scanning and scanning rate can be evaluated.
•Simplified evaluation application: Data can be collated with a configuration file and dates can be read.

•Past record collection application (chargeable)
Application that allows start of operation without new application development at the time of introduction

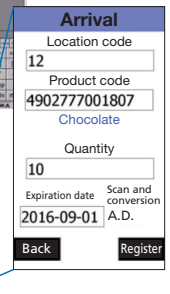
•Arrival
•Shipment
•Inventory check
Past record collection and expiration date input are possible by linking data to locations.

•Collation: Collation by flexible combinations of barcodes, 2D Codes and text recognized with OCR is supported.
•Expiration date: Collation is possible by automatically setting the expiration date with reference to the date of scanning based on the product master registration.

【Simulated screens】

Test evaluation tool
(User dictionary setting screen)

Past record collection application
(Arrival screen)



Supported models	BHT-1461QWB-CE-O

One license is granted per product.
The application can be used on up to 20 BHT terminals per license.

Code generation application

Application for generating barcodes and 2D Codes

•In addition to barcodes and 2D Codes, GS1 DataBar (RSS) and GS1 Composite can be generated.

QRdraw® Ad	For outputting images generated in BMP file format, GIF, JPEG format and other formats, which can be used with various graphic applications	Supported OS :Windows10(32bit/64bit)	One license is required per PC. One license is granted per product.
QRmaker® Ad	For developing applications to generate 2D Codes and barcodes in combination with Microsoft Visual Basic and other development languages	Supported OS :Windows10(32bit/64bit)	One license is granted per product for development. Redistribution of executable only modules together with the developed application is permitted without a license. For the terms and conditions for redistribution of this application, please refer to the user's manual packed with the product.
QRmaker® JV	For generating QR Code without depending on OS in a server environment where Java (JDK)* runs *Generated QR Code can be freely distributed; however, using QR Code classes (including conversion to applets, etc.) distributed from a server is not permitted.	Hardware requirements: Java Development Kit 1.18 or higher (The attached sample runs on JDK 1.4)	One license is required per server (per CPU). If a server has more than one CPU, 0.1 license is required per additional CPU.

•SQRC® can be generated.

SQRC® maker	The SQRC generation function is added to the functions provided by QRmakerAd. *Please note that unlike QRmaker, the runtime library cannot be redistributed. *Barcodes or 2D Codes that are generated using this application cannot be used by distributing them via the Internet. If you wish to distribute them via the Internet, please use QKeys. (As long as such barcodes or 2D Codes are used within an office, they can be distributed via the Internet and used.)	Supported OS :Windows10(32bit/64bit)	One license is required per PC. One license is granted per product. For SQRC generation, a SQRC generation license is required. It is necessary to separately conclude a license agreement with DENSO WAVE.
QKeys®	The SQRC generation function can be used by any systems and services connected to the Internet.	Does not depend on the OS	For operation, it is necessary to apply for the cloud service. For details, please contact DENSO WAVE.
Q Platform®	The SQRC generation function can be used by any systems and services connected to the Internet. (See P.82 for details)	Does not depend on the OS	For operation, it is necessary to apply for the cloud service. For details, please contact DENSO WAVE.

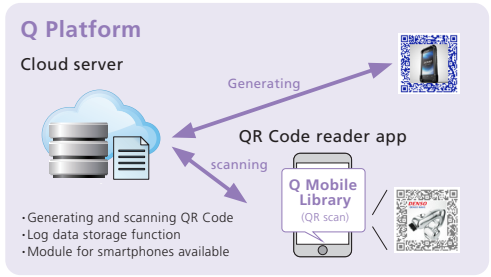
QR Code® solutions

DENSO WAVE cloud service

Q Platform®

Q Platform is registered trademark of DENSO WAVE Inc.

Q Platform® is a cloud service for generating, and scanning new QR Code® that achieves various solutions.



[Overview]

The service consists of a cloud system "Q Platform" (which has functions to generating and scanning new QR Code and to store the history data) and a function module for the smartphone application that works with the cloud "Q Mobile Library".

Overview of the functions of Q Platform®

Q Platform

Function	Overview
Scanning	SQRC, FrameQR
Generation	QR Code, SQRC, FrameQR
Log storage	Generation and scanning, date, time, and number of requests for the above QR Code

Q Mobile Library: smartphone application function module

Overview
QR Code, SQRC*, FrameQR* scanning function

*Requires connection to Q platform.

DENSO WAVE cloud service

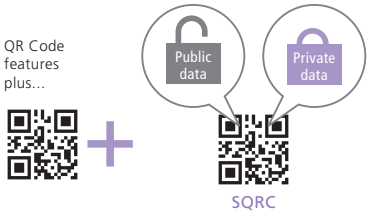
SQRC®

SQRC is registered trademark of DENSO WAVE Inc.

Looks like an ordinary QR Code but incorporates two information areas into single code.

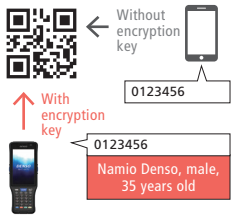
[Overview]

- SQRC looks just like ordinary QR Code but also displays private data when scanned by a specific reader.
- A single SQRC carries both general information (public data) and personal information (private data).
- Private data can be read only by a reader with the same encryption key as the one used to generate the SQRC.
- To ensure high security, SQRC are generated by compatible printers or markers.



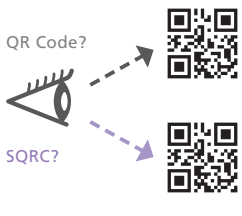
Feature 1: Two information areas

Data stored in two information areas



Feature2: Read restriction

Readable only by encryption key-aware reader



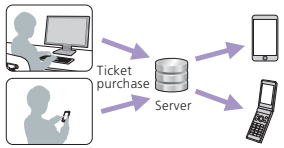
Feature 3: Same appearance as QR Code

SQRC can't be distinguished from an ordinary QR Code by appearance.

Example of use of SQRC on amusement park tickets

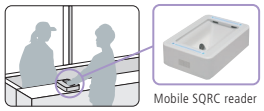
❶ Obtaining mobile ticket

- Purchase ticket online from mobile phone or PC.
- Ticket is transmitted to mobile phone (or PC) when user selects "mobile ticket" option.



❷ Admissions using the mobile ticket

- SQRC is scanned by the reader at the entrance to complete the admission procedure.



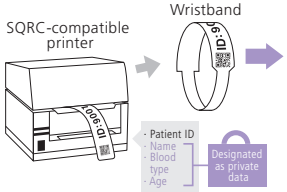
SQRC advantages

- SQRC serves as a standalone ticket when read by scanner at the entrance.
- When scanned by an ordinary scanner, the SQRC displays related content (e.g., performer videos).

Example of use of SQRC at medical institution (wristbands for inpatients)

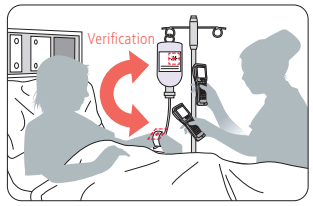
Issuance (printing)

Issue wristband (with SQRC) to each inpatient.



Verifying patient identity (wristband on inpatient)

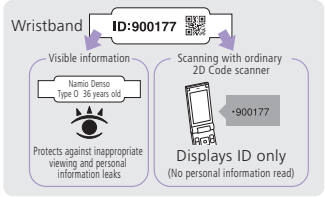
Scan the SQRC on the wristband and drug label for verification before administration.



Verification of personal identity for malpractice prevention

SQRC advantages

All private information is encoded and locked in the SQRC.



Protecting confidential patient information

Facial Authentication SQRC

Facial Authentication SQRC incorporates face recognition information to enable offline face authentication.

[Overview]

- Quick, reliable offline verification of personal identity without server access.
- Eliminates need for business operators to retail customer facial data, reducing manhours required to manage information.

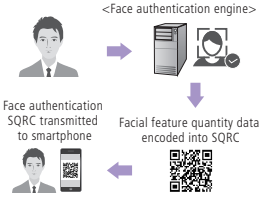
Registration

Face picture or ID card with face photo is used to register facial image.

Acquisition

Encoding facial feature data into SQRC

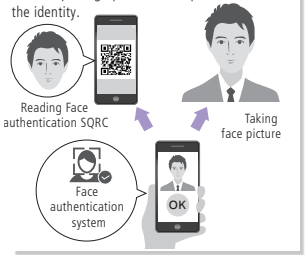
Facial features data is extracted from the loaded data by the face authentication engine. The data is then encoded into the SQRC, which is transmitted to the smartphone or printed out.



Usage

Offline authentication with face and SQRC

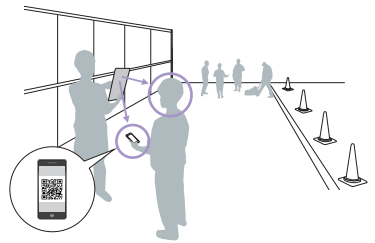
Match the face authentication SQRC transmitted to the smartphone with the data of the face photographed on the spot to confirm the identity.



Example of face authentication SQRC

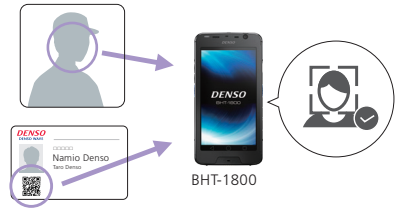
Manufacturing facilities

Application: Managing working hours of day laborers
Advantage: Eliminates errors in entry of working hours



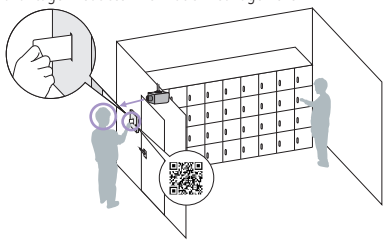
Workplaces where qualified workers must be present

Application: Use in workplaces (e.g., factories) where qualified workers must be present
Advantage: Assures work is performed by qualified workers.



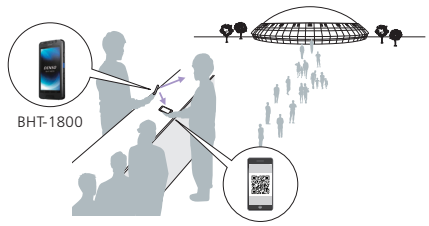
Security rooms

Application: Managing admission to restricted areas (companies, schools, etc.) where confidential information is handled
Advantage: Reduces information leakage risks



Concert halls

Application: Admissions to concert halls
Advantage: Prevents unauthorized admission/ticket resale.



Contact a DENSO WAVE sales representative, or submit an inquiry at our website for details.

Robotics

DENSO WAVE offers a comprehensive range of robotics solutions and reliable support to bring “ease of use” to all those involved in robot work in a variety of situations including design, startup, operation, and maintenance.

Collaborative Robots
COBOTTA®

Anywhere, anytime, hassle-free.
A robot that collaborates with everyone.

Ergonomic form, and portable compact body.
COBOTTA can be taken anywhere by anyone for immediate work automation.

1 safety design

3 easy to use

2 Portable body

4 open platform

Click here for details.
(DENSOWAVE website)

IoT Solutions

“ORiN” middleware technology integrated into the computer enables communication with various FA equipment, realizing unified access from existing equipment to new equipment.

Data Integration Controller
IoT Data Server

IoT Data Server is a "Data Integration Controller" consisting of high reliable industrial computer and non-programming data integration software.
It equips standard data management functions developed especially for data collection, process, saving, notice and publishing. These functions will help the data management in various scenes from the production cell system to production line, factory, cloud system.

Data Integration Software
IoT Data Share

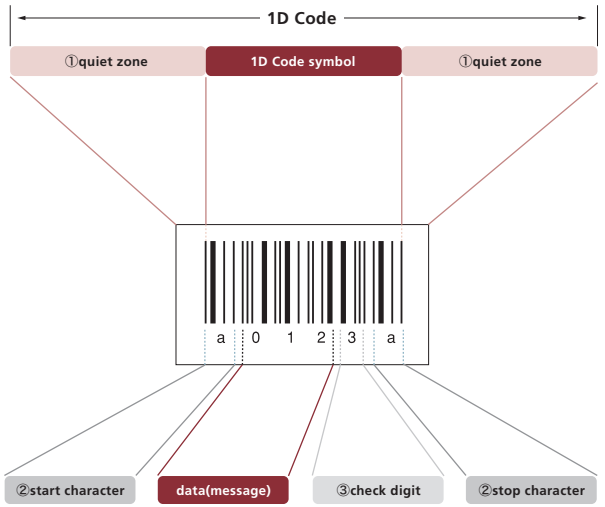
IoT Data Share is "Data Integration Software" that enables to connect various automation devices without programming and to provide functions of data collect, process, save, notify and publish.The collected data can be used as a trigger with setting any conditions. To link with such trigger, emailing, database writing, and external functions are available.

Click here for details.
(DENSOWAVE website)

What is a "1D Code" ?

1D Code Structure

Although there are many types of barcode, its structure is as below in general. Black and white stripes expresses various character and data.



①Quiet zone (margin)
Spaces, normally white, where nothing printed are required at each end of the code and they should be 10 times that of a narrow bar.

②Start／Stop character
Indicates the start/stop of the data. Depending on the code system, start/stop character varies.

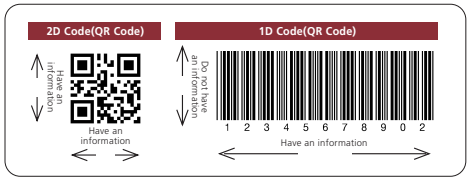
③Check digit
(symbol check character)
Confirm that there are no error in reading by means of one digit of compiled data. It is also called as symbol check character.

The kind and feature of 1D Code

	EAN (JAN)	Interleaved 2 of 5	Codabar (NW-7)	CODE39	CODE128	GS1 DataBar (RSS)
Symbol	4912345678904	1234567890	a123456a	*CODE39*	CODE128	(01) 15012345678976
The kind of character	●Numeric character (0-9)	●Numeric character (0-9)	●Numeric character (0-9) ●Synbok (-,$,:,/,+,.) ●Start/stop character (a-d)	●Numeric character (0-9) ●Synbok (-,$,:,/,+,.) ●Alphabet (A-Z) ●Start/stop character (*)	●Full ASCI code (128 kinds) ●3 types of start character (stop character is 1 type) ●4 types of non data function character ●4 types of code setting selection character	●Numeric character (0-9)
Feature	●The most opularized cide as common commodity code ●Compatible with EAN in Europe, and UPC in US	●Suitable for high density printing ●Used for logistics as standard code	●Easy to print by printer	●Printable in Alphabets ●Employed by US Ministry of Defence in MIL standard	●Use various characters ●Enable to express 2 digit charactoer(00-99) by the 2 times density comparing to the density of 1 character	●Enable to express GTIN is new commodity code ●Print in small space
Example	●Common commodity code (Be attached on all the commodities)	●Standard code in logistics ●Used for miniature labels on small stuff ●Used for logistics (packaging boxes)	●Used for expense sheet for delivery service ●Used for envelopefir DPE photo print ●Used for blood management	●Used worldwide in FA field such as AIAG tugs,ODETTE tugs and EIAJ tugs.	●Used for payment of utilities ●Manage of medical materials ●Manage of electronic component	●Used for prevention of medical malpractice ●Used as drug medicine code

What is a "2D Code" ?

2D Code is progressing from the stacked bar code method (that stacks bar codes), to the increased information density matrix method.



2D Codes

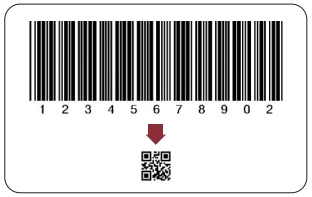
Here is typical 2D Codes and its feature.

		QR Code	DataMatrix	MaxiCode	PDF417	Aztec
						
Developer(country)		DENSO WAVE (Japan)	RVSI Acuity CiMatrix (USA)	UPS (USA)	Symbol Technologies (USA)	Welch Allyn (USA)
Data capacity	Numeric	7,089	3,116	138	2,710	3,832
	Alphanumeric	4,296	2,355	93	1,850	3,067
	Binary	2,953	1,556	—	1,018	1,914
	Kanji	1,817	778	—	554	957
Main features		Large capacity, small printout size, High speed scan	small printout size	High speed scan	Large capacity	High speed scan
Main usages		All categories	FA	Logistics	OA	transportation
Standardization		ISO JIS AIM International	ISO AIM International	ISO AIM International	ISO AIM International	ISO AIM International

What is a "QR Code®" ?

QR Code is registered trademark of DENSO WAVE Inc.

QR Code® is developed by DENSO WAVE (a division of DENSO Corporation at the time) and released in 1994. QR Code® is the most popular 2D Code in Japan.



High Capacity Encoding of Data

QR Code is capable of handling all types of data, such as numeric and alphabetic characters, Kanji, Kana, Hiragana, symbols, binary, and control codes. Up to 7,089 characters can be encoded in one symbol.

Small Printout Size

Since QR Code carries information both horizontally and vertically, QR Code is capable of encoding the same amount of data in approximately one-tenth the space of a traditional bar code.

Reading from any direction in 360°

QR Code is capable of 360 degree (omni-directional), high speed reading.

Kanji and Kana Capability

As a symbology developed in Japan, QR Code is capable of encoding JIS Level 1 and Level 2 kanji character set.
In case of Japanese, one full-width Kana or Kanji character is efficiently encoded in 13 bits.

Dirt and Damage Resistant

QR Code has error correction capability. Data can be restored even if the symbol is partially dirty or damaged.
*Data restoration may not be fully performed depending on the amount of dirt or damage.

The maximum data capacity of QR Code®

Version (Number of cell) \ Amount of data, ECC Level	Numeric				Alphanumeric				Binary				Kanji			
	L	M	Q	H	L	M	Q	H	L	M	Q	H	L	M	Q	H
1(21)	41	34	27	17	25	20	16	10	17	14	11	7	10	8	7	4
2(25)	77	63	48	34	47	38	29	20	32	26	20	14	20	16	12	8
3(29)	127	101	77	58	77	61	47	35	53	42	32	24	32	26	20	15
4(33)	187	149	111	82	114	90	67	50	78	62	46	34	48	38	28	21
5(37)	255	202	144	106	154	122	87	64	106	84	60	44	65	52	37	27
6(41)	322	255	178	139	195	154	108	84	134	106	74	58	82	65	45	36
7(45)	370	293	207	154	224	178	125	93	154	122	86	64	95	75	53	39
8(49)	461	365	259	202	279	221	157	122	192	152	108	84	118	93	66	52
9(53)	552	432	312	235	335	262	189	143	230	180	130	98	141	111	80	60
10(57)	652	513	364	288	395	311	221	174	271	213	151	119	167	131	93	74
11(61)	772	604	427	331	468	366	259	200	321	251	177	137	198	155	109	85
12(65)	883	691	489	374	535	419	296	227	367	287	203	155	226	177	125	96
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

●Error correction level L can restore .Approx. 7% of codewords, and level M can restore .Approx. 15%, and level Q can restore .Approx. 25%, and level H can restore .Approx. 30%

QR Code® Size (Including the margin)

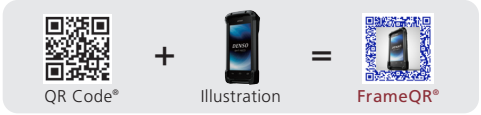
Version (Number of cell) \ Cell size	0.19 mm	0.25 mm	0.33 mm	0.42 mm	0.5 mm
1(21)	5.5	7.3	9.6	12.2	14.5
2(25)	6.3	8.3	10.9	13.9	16.5
3(29)	7.0	9.3	12.2	15.5	18.5
4(33)	7.8	10.3	13.5	17.2	20.5
5(37)	8.6	11.3	14.9	18.9	22.5
6(41)	9.3	12.3	16.2	20.6	24.5
7(45)	10.1	13.3	17.5	22.3	26.5
8(49)	10.8	14.3	18.8	23.9	28.5
9(53)	11.6	15.3	20.1	25.6	30.5
10(57)	12.4	16.3	21.5	27.3	32.5
11(61)	13.1	17.3	22.8	29.0	34.5
12(65)	13.9	18.3	24.1	30.7	36.5
⋮	⋮	⋮	⋮	⋮	⋮

●Require margin of 4 cell around QR Code

What is FrameQR®?

FrameQR Code is registered trademark of DENSO WAVE Inc.

FrameQR® is a new QR Code® which has a blank canvas area.
The canvas area can be changed as needed depending on the application. Thus, FrameQR® can be used for various applications.



Feature 1: This QR Code® has a blank canvas area in the center.
Feature 2: The canvas shape can be set as needed depending on the application.

Examples of FrameQR® applications

①Business cards

Advantage: The eye-catching FrameQR helps the recipient remember your face.

②Advertisements

Advantage: FrameQR helps the prospective shoppers understand the content before they access the advertisements.

FrameQR®-compatible smartphone reader QR Code® reader "QRQR"

- The QR Code reader application for smartphones features the latest scanning engine.
- Various codes are scanned instantaneously. Barcodes, QR Code, FrameQR
- QR Code creation function

Download here (free of charge)!

App Store

Google Play

What is FrameQR®-K?

- FrameQR-K is a new type of code comprised of FrameQR and a QR Code.
- When FrameQR-K is scanned by an ordinary QR Code reader, it accesses the website for downloading the FrameQR reading application.

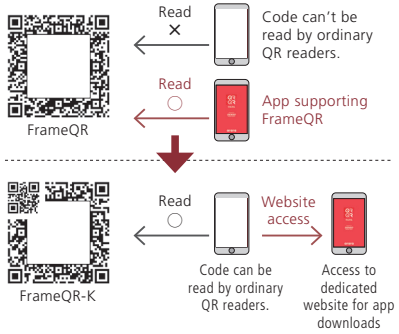
Features of FrameQR-K

The canvas area, a major feature of FrameQR, can be used flexibly without interference with code reading operations.

Addresses FrameQR's drawbacks.

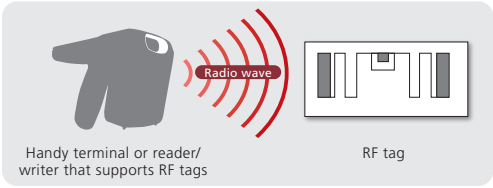
[Drawbacks resolved by FrameQR-K]

- Code can't be read by ordinary QR readers.
- Dedicated website for the download of app must be specified separately.



What is RFID? Features of UHF RFID are introduced here.

RFID is a system that allows reading and writing of RF tag data in a noncontact manner by radio waves. In a barcode system, tags are scanned one by one by laser or by another method, while in a RFID system, more than one RF tag can be scanned simultaneously by radio waves. As long as they are within reach of the relevant radio waves, RF tags can be scanned, even if they are some distance away.

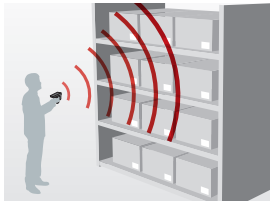


Feature 1: More than one RF tag can be scanned simultaneously by just holding the scanner over the tags.

Users do not have to look for the tags and scan them one by one; more than one RF tag can be scanned simultaneously by just holding the scanner over the tags. Inventory check time can be reduced to one-tenth that for operations using a barcode system.

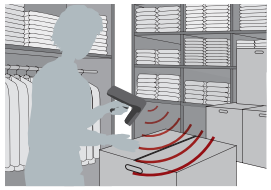
Feature 2: Distant tags can be scanned.

Since distant RF tags can be scanned, even hard-to-reach RF tags in high positions can be scanned quickly without using a stepladder. This feature not only reduces hours of work but also secures the safety of workers.



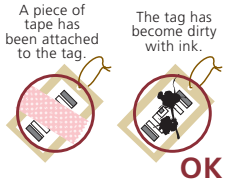
Feature 3: RF tags in a box can be scanned.

RF tags in a box can be scanned simultaneously without opening the box, improving work efficiency significantly.



Feature 4: RF tags with a stained surface can be scanned.

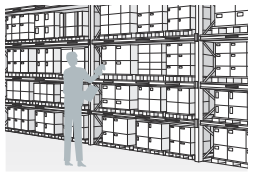
Even stained RF tags can be scanned, and accordingly, users do not have to worry even under poor use conditions.



Examples of RFID application

Inventory check at apparel shop backyard

Labor costs can be reduced by shortening work hours significantly. Furthermore, using a RFID system can make an inventory check less frequent, allowing the inventory situation to be confirmed in a more timely manner.



Inventory check at apparel shop

Using an RFID system can reduce the burden of inventory check work by employees, and accordingly, they can concentrate on providing service to customers, offering good prospects for an increase in sales.

Checkout operation at apparel shop

By placing a scanner on the checkout counter, tags can be scanned simultaneously by just putting products on the counter. This makes the checkout operation smooth, significantly shortens waiting times for customers, and reduces the loss of sales opportunities due to checkout queues.

Note regarding the use of the wireless function

[Caution]

The frequency range used by this product may also be used by in-plant wireless stations for moving object identification in factory production lines and amateur radio stations (license required), and by specified low power radio stations (license not required) (stations mentioned above will be referred to as "other stations" below), as well as in commercial, industrial and medical devices such as microwave ovens.

1. Before using this product, ensure that "other stations" are not being used near by.
2. If this product interferes with the communications of "other stations", promptly stop radio wave emissions from the product and contact us as to how to avoid the interference.
3. If any other problems concerning wireless communications of this product and/or "other stations" should occur, please contact us.interference.

●IEEE802.11a/b/g/n/ac: BHT-M80-QW/BHT-M80-QWG/BHT-M70-QW/BHT-M70-QWG/BHT-M60-QW/BHT-M60-QWG/BHT-540-QW/BHT-540-BW/BHT-530-QW/BHT-530-BW

IEEE802.11a/b/g/n
IEEE802.11a/n/ac
W52 W53 W56

① ② ③
2.4 DS OF 4
④

① 「2.4」: Intend the wireless function using 2.4GHz Band.
② 「DS/OF」: Pulse-code mode intends DS-SS mode or OFDM mode.
③ 「4」: Supposed interference distance is Approx. 40m.
④ 「▬▬」: Intend using all bands and the band of the moveing identification device is preventable.

●IEEE802.11a/b/g/n: BHT-1800QWB-1-A7/BHT-1800QWB-2-A7/BHT-1800QWB-3-A7/BHT-1800QWBG-1-A7/BHT-1800QWBG-2-A7/BHT-1800QWBG-3-A7/BHT-1700BWB-1-A7/BHT-1700QWB-1-A7/BHT-1700QWB-2-A7/BHT-1700QWBG-1-A7/BHT-1700QWBG-2-A7/BHT-1700QLWB-P-A7/BHT-1600QWB-A6N-S/1600QWB-A6N-RS/1600QWBG-A6N-S/1600QWBG-A6N-RS/1461BWB-CE/1461QWB-CE/1461QWB-CE-0/1361BWB-CE/1361QWB-CE/1306BWB/1306QWB/1306QWB-H

IEEE802.11a/b/g/n
IEEE802.11a/n/ac
W52 W53 W56

① ② ③
2.4 DS OF 4
④

① 「2.4」: Intend the wireless function using 2.4GHz Band.
② 「DS/OF」: Pulse-code mode intends DS-SS mode or OFDM mode.
③ 「4」: Supposed interference distance is Approx. 40m.
④ 「▬▬」: Intend using all bands and the band of the moveing identification device is preventable.

●IEEE802.11b/g/n: BHT-1406QIWBG / 1406QIWB / 1406QIWB-N / 1406QIWBG-C

① ② ③
2.4 DS OF 4
④

① 「2.4」: Intend the wireless function using 2.4GHz Band.
② 「DS/OF」: Pulse-code mode intends DS-SS mode or OFDM mode.
③ 「4」: Supposed interference distance is Approx. 40m.
④ 「▬▬」: Intend using all bands and the band of the moveing identification device is preventable.

●IEEE802.11b/g: 615QUMWB

① ② ③
2.4 DS OF 4
④

① 「2.4」: Intend the wireless function using 2.4GHz Band.
② 「DS/OF」: Pulse-code mode intends DS-SS mode or OFDM mode.
③ 「4」: Supposed interference distance is Approx. 40m.
④ 「▬▬」: Intend using all bands and the band of the moveing identification device is preventable.

●Bluetooth: BHT-1800QWB-1-A7 / BHT-1800QWB-2-A7 / BHT-1800QWB-3-A7 / BHT-1800QWBG-1-A7 / BHT-1800QWBG-2-A7 / BHT-1800QWBG-3-A7 / BHT-1700BWB-1-A7 / BHT-1700QWB-1-A7 / BHT-1700QWB-2-A7 / BHT-1700QWBG-1-A7 / BHT-1700QWBG-2-A7 / BHT-1700QLWB-P-A7 / BHT-1600QWB-A6-S / 1600QWB-A6-RS / 1600QWBG-A6-S / 1600QWBG-A6-RS / 1505BB / 1505QB / 1461BWB-CE / 1461QWB-CE / 1461QWB-CE-0 / 1406QIWBG / 1406QIWB / 1406QIWBG-C / 1406QIWB-N / 1306BWB / 1306BB / 1306QWB / 1306QB / 1306QWB-H / 1361BWB-CE / 1361QWB-CE / 615QUMWB / GT20B-SB / AT22B-SB / 27Q-SB / GT20Q-SB / SE1 / WS1 / UR30 / SE1-BUB-C

① ② ③
2.4 FH 2
④

① 「2.4」: Intend the wireless function using 2.4GHz Band.
② 「FH」: Pulse-code mode intends FH-SS mode.
③ 「2」: Supposed interference distance is Approx. 20m.
④ 「▬▬」: Intend using all bands and the band of the moveing identification device is preventable.

JBRC association promotes the recycling of small rechargeable batteries. Please cooperate with the recycling of small used batteries. For more information visit http://www.jbrc.com.

RSA SECURED

Wireless models utilize the BSAFE Software by RSA Security Inc.

Effort to the envirroment

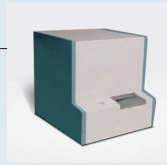
DENSO WAVE Inc. manufacturing and design processes use the EMS production process, thereby having a low impact on the environment. For more information about how DENSO WAVE Inc. is an eco friendly company, please visit http://www.denso-wave.com/en/about/eco/

History of DENSO WAVE AUTO-ID Products

DENSO WAVE will continue to endeavor to create value in new fields and applications by leveraging the core technologies we have accumulated over 50 years.

1970s

Developed barcode readers, etc. for manufacturing industry



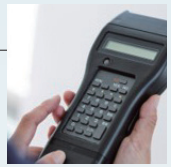
1982

Launched barcode scanner (equipped with world's first CCD image sensor)

BHS-200

1987

Launched handy terminal (world's first)



BHT-1

1994

Announced QR Code®

2014

Launched High-output RFID handy scanner (Japan's first)

BHT-1281QULWB-CE

2017

Launched handy terminal equipped with Android™

BHT-1600

2020

Lineup of four BHT-M Series (Android) and BHT-S Series (BHT-OS) handy terminal models to realize a new work style.

BHT-M80, M70, M60, S40, S30

ID SAMPLE

EAN-13

CODABAR (NW-7) with C/D

EAN-8

CODE39 with C/D

Interleaved 2 of 5 with C/D

CODE128

GS1 DataBar Omnidirectional (RSS Standard)

GS1 DataBar Stacked (RSS Stacked)

※C/D:check digit

2D SAMPLE

[QR code]

Alphabet : 100 digit

Kana・Kanji : 50 digit

[Micro QR code]

Number : 30 digit

[2D code]

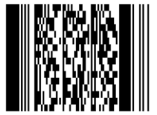
DataMatrix (ECC200)

Alphabet : 259 digit

MaxiCode

Alphabet : 93 digit

PDF417



Alphabet : 15 digit

GS1 DataBar Stacked Composite (RSS Stacked Composite)

1022M-3 2022.5