AUTO-ID Products

DENSO
DENSO WAVE
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.
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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Android™ 10</td>
</tr>
<tr>
<td>Screen</td>
<td>5.0 inch HD</td>
</tr>
<tr>
<td>Interface</td>
<td>Wireless LAN</td>
</tr>
<tr>
<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP65,67</td>
</tr>
</tbody>
</table>

* Equipped with Android™ 10

The large 5.0-inch screen enables various operations.

### BHT-M70

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>OS</td>
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<tr>
<td>Screen</td>
<td>4.0 inch WVGA</td>
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<tr>
<td>Interface</td>
<td>Wireless LAN</td>
</tr>
<tr>
<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP65,67</td>
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</tbody>
</table>

* Equipped with Android™ 10

High operability and scalability to meet on-site and operational needs.

### BHT-M60

<table>
<thead>
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<th>Description</th>
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</thead>
<tbody>
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<td>OS</td>
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<tr>
<td>Screen</td>
<td>3.2 inch WVGA</td>
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<tr>
<td>Interface</td>
<td>Wireless LAN</td>
</tr>
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<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP65,67</td>
</tr>
</tbody>
</table>

* Equipped with Android™ 10

Operational efficiency fostered by one-handed operation.

### BHT-1800

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>OS</td>
<td>Android™ 7.2</td>
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<tr>
<td>Screen</td>
<td>5.0 inch HD</td>
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<tr>
<td>Interface</td>
<td>Wireless LAN</td>
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<tr>
<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP67</td>
</tr>
</tbody>
</table>

* Equipped with Android™ 7.2 based light and thin 5.0-inch smart terminal

### BHT-1700

<table>
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<tr>
<th>Feature</th>
<th>Description</th>
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<td>OS</td>
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<tr>
<td>Screen</td>
<td>4.0 inch WVGA</td>
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<td>Interface</td>
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<tr>
<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP67</td>
</tr>
</tbody>
</table>

* Equipped with Android™ 7.2 based handheld terminal with a 4.0-inch large display and hardware keys that is operable with one hand

### BHT-1600

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>OS</td>
<td>Android™ 6.0</td>
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<td>Screen</td>
<td>4.7 inch HD</td>
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<tr>
<td>Interface</td>
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<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP67</td>
</tr>
</tbody>
</table>

* Robust, Large-Screen smart terminal with Android™ 6.0

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### BHT-S40

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>OS</td>
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<td>Screen</td>
<td>3.2 inch WVGA</td>
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<tr>
<td>Interface</td>
<td>Wireless LAN</td>
</tr>
<tr>
<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP65,67</td>
</tr>
</tbody>
</table>

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

### BHT-S30

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>OS</td>
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<tr>
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<tr>
<td>Interface</td>
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<tr>
<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP65,67</td>
</tr>
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</table>

* Compact model in a pocketable size.

### BHT-1500

<table>
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<tr>
<th>Feature</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>OS</td>
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<td>Screen</td>
<td>2.0 inch QVGA</td>
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<td>Interface</td>
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<tr>
<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP64</td>
</tr>
</tbody>
</table>

* Achieving both an ultra-compact body and excellent visibility

### BHT-1400

<table>
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<tr>
<th>Feature</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>OS</td>
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<td>Screen</td>
<td>3.2 inch WVGA</td>
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<td>Interface</td>
<td>Wireless LAN</td>
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<tr>
<td>Readable medium</td>
<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP64</td>
</tr>
</tbody>
</table>

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

### BHT-1300

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>OS</td>
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<tr>
<td>Screen</td>
<td>2.4 inch QVGA</td>
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<tr>
<td>Interface</td>
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</tr>
<tr>
<td>Protection rating</td>
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</table>

* BHT-OS

* Perfectly suitable for any situation

### BHT-1306QWB-H

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<td>1D Codes</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP64</td>
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</tbody>
</table>

* Temperature sensor model

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* Android is a trademark of Google LLC. * Windows is the registered trademark of Microsoft Corporation in the U.S. and other countries.
* Bluetooth is the registered trademark of Bluetooth SIG, Inc.
1D Codes - 2D Codes

Handy scanner

**SF1**
- P.38
- Small and robust scanner

**SE1**
- P.39
- Pocket-size model

**GT20**
- P.41
- Robust, high-spec model

**AT20**
- P.43
- Standard model focusing on operability

**AT30**
- P.45
- 2D scanners also support “touch scanning”

<table>
<thead>
<tr>
<th>Interface</th>
<th>SF1</th>
<th>SE1</th>
<th>GT20</th>
<th>AT20</th>
<th>AT30</th>
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<tbody>
<tr>
<td>Rs-232C</td>
<td>─</td>
<td>─</td>
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<td>●</td>
<td>●</td>
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<tr>
<td>USB keyboard</td>
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<td>●</td>
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<tr>
<td>USB COM</td>
<td>─</td>
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<td>●</td>
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<td>●</td>
</tr>
<tr>
<td>PS/2 keyboard</td>
<td>─</td>
<td>─</td>
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<td>─</td>
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</tr>
<tr>
<td>Bluetooth®</td>
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<td>─</td>
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<table>
<thead>
<tr>
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<th>2D Codes</th>
<th>1D Codes</th>
<th>2D Codes</th>
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<th>2D Codes</th>
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<td>IPX2</td>
<td>IP65</td>
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<td>IP42</td>
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</table>

**SH1**
- P.46
- A compact model that is easy to keep clean

**HC76**
- P.47
- New contact scanning model for POS

**QS20P**
- P.47
- Micro QR Code contact scanning model

**GT20QD**
- P.47
- Designed for direct part marking on metallic workpieces

<table>
<thead>
<tr>
<th>Interface</th>
<th>SH1</th>
<th>HC76</th>
<th>QS20P</th>
<th>GT20QD</th>
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<tbody>
<tr>
<td>Rs-232C</td>
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<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>USB keyboard</td>
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<td>●</td>
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<td>●</td>
</tr>
<tr>
<td>USB COM</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>PS/2 keyboard</td>
<td>─</td>
<td>─</td>
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<td>─</td>
</tr>
<tr>
<td>Bluetooth®</td>
<td>─</td>
<td>─</td>
<td>─</td>
<td>─</td>
</tr>
<tr>
<td>Ethernet</td>
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<table>
<thead>
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<th>Readable medium</th>
<th>1D Codes</th>
<th>2D Codes</th>
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<th>2D Codes</th>
<th>1D Codes</th>
<th>2D Codes</th>
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<td>─</td>
<td>─</td>
<td>IP65G</td>
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</table>
## Fixed type scanner

### QK30
- **P.49**
- High-speed scanning of mobile QR Code

### QM30
- **P.50**
- Ultra-small 3.5 cm case dimensions incorporation into a wide range of devices

### QB33
- **P.51**
- Compact installation and built-in model

### FD2
- **P.52**
- From the smallest workpieces to long distance reading
- Freedom at the push of a button

### Wearable SF1
- **P.54**
- Tough and clean wearable scanner

### Handheld terminal
- **P.55**
- Specified low-power radio station model

### Table of Specifications

<table>
<thead>
<tr>
<th>Control Type</th>
<th>Interface</th>
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<th>Protection rating</th>
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<td>QK30</td>
<td>RS-232C</td>
<td>1D Codes · 2D Codes</td>
<td>IPX2</td>
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<td>QM30</td>
<td>USB keyboard</td>
<td>1D Codes · 2D Codes</td>
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<td>USB COM</td>
<td>1D Codes · 2D Codes</td>
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<td>USB keyboard</td>
<td>1D Codes · 2D Codes</td>
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### 1D Codes - 2D Codes

<table>
<thead>
<tr>
<th>Handheld terminal</th>
<th>Handheld terminal</th>
<th>Handheld terminal</th>
<th>Handheld terminal</th>
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<tbody>
<tr>
<td>UR50</td>
<td>UR40</td>
<td>UR20</td>
<td>SP1</td>
<td>UR30</td>
</tr>
<tr>
<td>P.56</td>
<td>P.57</td>
<td>P.58</td>
<td>P.59</td>
<td>P.61</td>
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### RFID

<table>
<thead>
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<th>Reader/Writer</th>
<th>Reader/Writer</th>
<th>Reader/Writer</th>
<th>RFID</th>
</tr>
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<tbody>
<tr>
<td>UR50</td>
<td>UR40</td>
<td>UR20</td>
<td>BHT-615QUMWB</td>
</tr>
<tr>
<td>P.56</td>
<td>P.57</td>
<td>P.58</td>
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### 1D Codes - 2D Codes

<table>
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<th>Handheld terminal</th>
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<tbody>
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<td>UR50</td>
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<td>UR30</td>
</tr>
<tr>
<td>P.56</td>
<td>P.57</td>
<td>P.58</td>
<td>P.59</td>
<td>P.61</td>
</tr>
</tbody>
</table>

### References

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

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**NEW**

- A fixed type scanner of UHF RF tags ideal for factory automation and logistics (250 mW / middle-distance type)
- A fixed type scanner of UHF RF tags ideal for factory automation and logistics (1 W / long-distance type)
- Ultra-thin stationary scanner that can be installed anywhere
- High-speed reading, RF tag reading distance
- Approx. 8m 1W high-output handy scanner

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**RFID**

- **Handheld terminal**
- Specified low-power radio station model
- **UR50**
- **UR40**
- **UR20**
- **SP1**
- **UR30**
- **SE1-BUB-C**

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**Notes**

- * 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
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.

**Table 1**

<table>
<thead>
<tr>
<th>RFID TAG</th>
<th>IC card Reader/Writer</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-paper tag NEW</td>
<td>QK30-IC NEW</td>
</tr>
<tr>
<td>Combining the RFID's feature which automates read/write with visibility of paper label.</td>
<td>IC cards + mobile QR Code*</td>
</tr>
<tr>
<td>Band</td>
<td>UHF</td>
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<tr>
<td>Protection rating</td>
<td>IP54</td>
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<tr>
<td>Equivalent to IP53</td>
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<table>
<thead>
<tr>
<th>Interface</th>
</tr>
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<tbody>
<tr>
<td>RS-232C</td>
</tr>
<tr>
<td>USB keyboard</td>
</tr>
<tr>
<td>USB COM</td>
</tr>
<tr>
<td>PS/2 keyboard</td>
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<tr>
<td>Bluetooth®</td>
</tr>
<tr>
<td>Ethernet</td>
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<table>
<thead>
<tr>
<th>Readable medium</th>
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</thead>
<tbody>
<tr>
<td>1D Codes</td>
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</table>

| Protection rating | IPX2 |

**Table 2**

<table>
<thead>
<tr>
<th>OCR Handheld terminal</th>
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<tbody>
<tr>
<td>OCR-capable hand-held terminal</td>
</tr>
<tr>
<td>FC1</td>
</tr>
<tr>
<td>Fixed type scanner</td>
</tr>
<tr>
<td>QK30-OP-U</td>
</tr>
<tr>
<td>Quick scanning of passport information and images</td>
</tr>
<tr>
<td>Instantaneous scanning of passports</td>
</tr>
</tbody>
</table>

| OS | Android 10 |
| GS | |
| Readable medium | |
| Protection rating | IPX2 |

<table>
<thead>
<tr>
<th>Protection rating</th>
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</thead>
<tbody>
<tr>
<td>1D Codes</td>
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<tr>
<td>Handheld terminal</td>
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<tr>
<td>Fixed type scanner</td>
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<td>RFID</td>
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<td>IC card</td>
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<table>
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<tr>
<th>Product Line Up</th>
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<td>Handy scanner</td>
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<td>Fixed type scanner</td>
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<td>Wearable scanner</td>
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**Table 3**

<table>
<thead>
<tr>
<th>BHT-M80</th>
<th>BHT-M70</th>
<th>BHT-M60</th>
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<tr>
<td>OCR-capable hand-held terminal</td>
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</tbody>
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| QK30-OP-U |
| Quick scanning of passport information and images |

<table>
<thead>
<tr>
<th>Protection rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D Codes</td>
</tr>
<tr>
<td>Handheld terminal</td>
</tr>
<tr>
<td>Fixed type scanner</td>
</tr>
<tr>
<td>RFID</td>
</tr>
<tr>
<td>IC card</td>
</tr>
<tr>
<td>OCR-capable hand-held terminal</td>
</tr>
</tbody>
</table>

| QK30-OP-U |
| Quick scanning of passport information and images |

<table>
<thead>
<tr>
<th>Protection rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D Codes</td>
</tr>
<tr>
<td>Handheld terminal</td>
</tr>
<tr>
<td>Fixed type scanner</td>
</tr>
<tr>
<td>RFID</td>
</tr>
<tr>
<td>IC card</td>
</tr>
</tbody>
</table>
**Handheld terminal with Android™10**

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

---

**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-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

<table>
<thead>
<tr>
<th>[Battery]</th>
<th>[Communication Unit]</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHT-M70-QW</td>
<td>CU-M70 (USB type: With a spare battery charger)</td>
</tr>
<tr>
<td>BHT-M70-QWG</td>
<td>CU-M70UQ (USB type: Without a spare battery charger)</td>
</tr>
<tr>
<td>BHT-M70L (LAN type: With a spare battery charger)</td>
<td></td>
</tr>
</tbody>
</table>

### Options

<table>
<thead>
<tr>
<th>Without a spare battery charger</th>
<th>With a spare battery charger</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-slot main unit charge</td>
<td>4-slot battery charge</td>
</tr>
<tr>
<td>4-slot charge</td>
<td>4-slot charge</td>
</tr>
<tr>
<td>ACD</td>
<td>ACD</td>
</tr>
<tr>
<td>Bluetooth</td>
<td>Bluetooth</td>
</tr>
<tr>
<td>Connecting</td>
<td>Connecting</td>
</tr>
<tr>
<td>(4-slot)</td>
<td>(3-slot)</td>
</tr>
<tr>
<td>CU-M70UQ</td>
<td>CU-M70L</td>
</tr>
<tr>
<td>CU-M70-UQ</td>
<td>CU-M70L</td>
</tr>
<tr>
<td>CU-M70-UQ</td>
<td>CU-M70L</td>
</tr>
<tr>
<td>CH-B7T-4</td>
<td>CH-B7T-4</td>
</tr>
</tbody>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>BHT-M70-QW</th>
<th>BHT-M70-QWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>72 mm (W)</td>
<td>75 mm (W)</td>
</tr>
<tr>
<td>126 mm (H)</td>
<td>130 mm (H)</td>
</tr>
<tr>
<td>20 mm (D)</td>
<td>21 mm (D)</td>
</tr>
</tbody>
</table>

### Software [P.69-81]

#### Development/kitting/operation tools

- BHT Booster
- BHT Link
- BHT OCR

#### Terminal management/maintenance tool

- BHT DMS
- BHT Remote
- BHT Security Package

#### Useful Software (Free/Preinstall)

- BHT Setting
- GW-ManManager
- GWT Setting
- BHT Browser
- BHT Boote
- Battery Monitor
- Application Launcher
- HandTest
- BHT Logger

*Some software has optional features for a fee.

### Specification

<table>
<thead>
<tr>
<th>Model</th>
<th>Wireless LAN connection</th>
<th>2D Code model</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHT-M70-QW</td>
<td>Wireless LAN+Wireless WAN</td>
<td>BHT-M70-QWG</td>
</tr>
</tbody>
</table>

### Operating system

- Android 10

### Memory

- 2GB RAM
- 16GB Flash ROM

### Display

- Capacitive multi-touch screen with glove touch support and water droplet false touch prevention
- Capacitive multi-touch screen

### Reading

- Data Matrix (ECC200), and GS1 Composite
- Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), and Standard 2 of 5 (STF), GS1 DataBar (GS1)

### Communication

- FDD-LTE (4G) - Bands 1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 19, 20, 25, 26, 28
- TDD-LTE (4G) - Bands 39, 40, 41
- WCDMA/UMTS/HSPA/HSPA+(3G) - Bands 1, 2, 4, 5, 6, 8, 12, 17, 20, 25, 26, 28
- GSM/GPRS/EDGE (2G) - Bands 850, 900, 1800, 1900MHz

### Software

- BHT Security Package
- BHT DMS
- BHT Remote
- BHT Security Package

### Power

- BHT Link
- BHT Security Package

### Operating

- Android 10

### Memory

- microSD (SDHC and SDXC (up to 128 GB))
- SDHC Speed class 4 support

### Camera

- Rear 13-megapixel auto-focusing with a LED light

### Reader

- Code: 0.127 mm
- Reading speed: 20% (Black bar/White bar, 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 (GS1))

### Supply

- Lithium-ion battery
- Main battery
- Flash ROM 64 GB

### Dimensions

<table>
<thead>
<tr>
<th>BHT-M70-QW</th>
<th>BHT-M70-QWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>170(D)×105(W)×115(H)mm</td>
<td>170(D)×105(W)×115(H)mm</td>
</tr>
<tr>
<td>130(D)×109(W)×53(H)mm</td>
<td>130(D)×109(W)×53(H)mm</td>
</tr>
</tbody>
</table>

### Protection Class

- IP 65, IP 67

### Drop Resistance

- Up to 2.5 m

### OS

- Android™ 10

### Bluetooth/Wireless LAN

- 4G/LTE

### Card slot

- micro SIM/SDHC/SDXC, SDHC Support
- micro SIM/SDSDHC/SDXC, SDHC Support

---

*Battery is not supplied with the product.*

---

*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) Compliant with IEEE802.11a/b/g/n/ac and MU-MIMO 2x2 5 GHz-band (W52, W53, W56 and W58) *4) Compliant with IEEE802.11a/b/g/n/ac and MU-MIMO 2x2 5 GHz-band (W52, W53, W56 and W58) *5) ISO/IEC14443A&B, FeliCa, ISO/IEC15693 (RFID) *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.
Equipped with **Android™ 10**

Operational efficiency fostered by one-handed operation.

**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-meter drops. 1 m 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

**Robustness**

**Protection Class**

IP 65, IP 67

**Drop Resistance:** Up to 3.0 m

**Display**

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

**Battery**

- Without a spare battery charger
- With a spare battery charger

**Dimensions**

<table>
<thead>
<tr>
<th>BHT-M60-WQ</th>
<th>BHT-M60-WWG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit</strong></td>
<td><strong>Unit</strong></td>
</tr>
<tr>
<td>195(W) x 70(D) x 40(H)</td>
<td>195(W) x 70(D) x 40(H)</td>
</tr>
</tbody>
</table>

**Supporting codes**

1D Codes · 2D Codes

- QR code®
- Micro QR code
- Micro PDF417
- Data Matrix (EC-200), and GS1 Compound
- Codabar (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), and Standard 2 of 5 (STF), GS1 DataBar (RSS)
- GS1 DataBar (RSS)

**Communication system**

- USB (USB Type-C)
- Wired connection (S100 royalty-free)
- AC adapter 100V-240V 50/60Hz

**Development/kitting/operation tools**

- Software Development Kit for Android (SDK)
- BHT Browser
- BHT Booster
- BHT Link
- BHT OCR
- BHT Setting
- BHT Logger
- BHT DMS
- Application Launcher

**ApplicationLauncher**

**Wireless LAN connection**

- Wireless LAN+Wireless WAN

**Software** (P. 69-81)

**Development/kitting/operation tools**

- Software Development Kit for Android (SDK)
- BHT Browser
- BHT Booster
- BHT Link
- BHT OCR
- BHT Setting
- BHT Logger
- Application Launcher

**Remote Terminal**

- BHT Remote
- BHT Security Package

**Supporting software**

- Free-Preinstall
- BHT Setting
- BHT Manager
- BHT Browser
- BHT Booster
- BHT Security

**Battery**

- 3.26-inch WVGA (480×800 dots)
- 13-megapixel auto-focusing with a LED light
- 3.2 VGA (240×320 pixels)
- 1.3-megapixel auto-focusing with a LED light

**Specifications**

**Dimensions**

- 112(D)×81.7(W)×30.4(H) mm
- 112(D)×90(W)×361(H) mm
- 127(D)×90(W)×113(H) mm
- 127(D)×101(W)×113(H) mm

**Protection**

- IP65 and IP67

**Operating temperature**

- -20°C to 50°C

**Operating humidity**

- 90% or less (at 30°C)
- 80% or less (at 40°C)

**Speaker**

- 90dB or more at 10 cm away (at 2.8kHz)

**Microphone**

- 100dB or more at 10 cm away (at 2.8kHz)

**Battery**

- Lithium-ion battery
- 3200 mAh battery
- 2D Code model
- 2.5 hours
- DSO - LE (4G) - Band 3, 5, 7, 8, 10, 20, 26, 28

**Power supply**

- Not supported
- 2 USB charging
- Compliant with Qualcomm Quick Charge™ 3.0

**Main battery**

- 3200 mAh battery

**Environmental**

- -20°C to 50°C
- 90% or less (at 30°C)
- 80% or less (at 40°C)

**Operating temperature**

- 3.0 m

**Display**

- Capacitive Multi-touch screen with glove touch support and water droplet false touch prevention

**Software**

- Android TM 10

**Memory**

- 4 GB RAM
- microSD (SDHC and SDXC (up to 128 GB)) SDHC Speed class 4 support

**Flash ROM**

- 64 GB

**Battery**

- 3.26-inch WVGA (480×800 dots)
- 13-megapixel auto-focusing with a LED light
- 1.3-megapixel auto-focusing with a LED light

**Dimensions**

- 127(D)×90(W)×113(H) mm
- 113(H) mm
- 127(D)×101(W)×113(H) mm

**Battery charger**

- With a spare battery charger
- With a spare battery charger
- Without a spare battery charger

**Environmental**

- -20°C to 50°C
- 90% or less (at 30°C)
- 80% or less (at 40°C)

**Software**

- Android TM 10

**Memory**

- 4 GB RAM
- microSD (SDHC and SDXC (up to 128 GB)) SDHC Speed class 4 support

**Flash ROM**

- 64 GB

**Battery**

- 3.2-inch WVGA (480×800 dots)
- 13-megapixel auto-focusing with a LED light
- 1.3-megapixel auto-focusing with a LED light

**Dimensions**

- 112(D)×81.7(W)×30.4(H) mm
- 112(D)×90(W)×361(H) mm
- 127(D)×90(W)×113(H) mm
- 127(D)×101(W)×113(H) mm

**Battery charger**

- With a spare battery charger
- Without a spare battery charger

**Environmental**

- -20°C to 50°C
- 90% or less (at 30°C)
- 80% or less (at 40°C)

**Software**

- Android TM 10

**Memory**

- 4 GB RAM
- microSD (SDHC and SDXC (up to 128 GB)) SDHC Speed class 4 support

**Flash ROM**

- 64 GB

**Battery**

- 3.2-inch WVGA (480×800 dots)
- 13-megapixel auto-focusing with a LED light
- 1.3-megapixel auto-focusing with a LED light

**Dimensions**

- 112(D)×81.7(W)×30.4(H) mm
- 112(D)×90(W)×361(H) mm
- 127(D)×90(W)×113(H) mm
- 127(D)×101(W)×113(H) mm

**Battery charger**

- With a spare battery charger
- Without a spare battery charger

**Environmental**

- -20°C to 50°C
- 90% or less (at 30°C)
- 80% or less (at 40°C)

**Software**

- Android TM 10

**Memory**

- 4 GB RAM
- microSD (SDHC and SDXC (up to 128 GB)) SDHC Speed class 4 support

**Flash ROM**

- 64 GB

**Battery**

- 3.2-inch WVGA (480×800 dots)
- 13-megapixel auto-focusing with a LED light
- 1.3-megapixel auto-focusing with a LED light

**Dimensions**

- 112(D)×81.7(W)×30.4(H) mm
- 112(D)×90(W)×361(H) mm
- 127(D)×90(W)×113(H) mm
- 127(D)×101(W)×113(H) mm

**Battery charger**

- With a spare battery charger
- Without a spare battery charger

**Environmental**

- -20°C to 50°C
- 90% or less (at 30°C)
- 80% or less (at 40°C)
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.

**Scanner**
- BHT-1800QWB-1-A7
- BHT-1800QWB-2-A7
- BHT-1800QWB-3-A7

**Camera**
- Front camera/NFC

**Memory**
- 512 MB Flash memory

**Software**
- BHT Browser

**System**
- Android™ 7.1.2

**Battery**
- Lithium-ion battery

**Protection Class**
- IP 67

**Display**
- 5.0 inch HD (720x1280 pixels)

**Dimensions**
- Width: 79 mm
- Height: 32 mm
- Depth: 75 mm

**Drop Resistance**
- Up to 2.5 m

**Resistance**
- Temperature: -20°C to 50°C

**Protection**
- NFC compatible

**Features**
- Includes GS1 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.

**Specs**
- 2D Codes: MaxiCode, DataMatrix (ECC200), GS1 Composite
- Communication: Wireless LAN + Wireless WAN model
- Frequency band: 2.4 GHz, 5.2 GHz
- Maximum communication rate: 1.5 Mbps

**Handy scanner**

**Specifications**

**Protection Class**
- IP 67

**Drop Resistance**
- Up to 2.5 m

**Robustness**
- Repair parts for the consumable parts are specifically Dragontrail® PRO, a registered trademark of AGC.
- Drop resistance: up to 2.5 m
- IP 67

**Components**
- Device: BHT-1800LA
- Hand strap
- Operation guide

---

**Table:**

<table>
<thead>
<tr>
<th>Device</th>
<th>BHT-1800QWB-1-A7</th>
<th>BHT-1800QWB-2-A7</th>
<th>BHT-1800QWB-3-A7</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Android™ 7.1.2</td>
<td>Android™ 7.1.2</td>
<td>Android™ 7.1.2</td>
</tr>
<tr>
<td>Memory</td>
<td>512 MB Flash memory</td>
<td>512 MB Flash memory</td>
<td>512 MB Flash memory</td>
</tr>
<tr>
<td>Camera</td>
<td>Front camera/NFC</td>
<td>Front camera/NFC</td>
<td>Front camera/NFC</td>
</tr>
<tr>
<td>Memory</td>
<td>512 MB Flash memory</td>
<td>512 MB Flash memory</td>
<td>512 MB Flash memory</td>
</tr>
<tr>
<td>Camera</td>
<td>Front camera/NFC</td>
<td>Front camera/NFC</td>
<td>Front camera/NFC</td>
</tr>
</tbody>
</table>

---

**Features**

- Includes GS1 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.

---

**Specifications**

- **Protection Class:**
  - IP 67

- **Drop Resistance:**
  - Up to 2.5 m

- **Robustness:**
  - Repair parts for the consumable parts are specifically Dragontrail® PRO, a registered trademark of AGC.
  - Drop resistance: up to 2.5 m
  - IP 67

---

**Components**

- Device: BHT-1800LA
- Hand strap
- Operation guide
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.

Features:
- Includes GSM 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.

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

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
- BHT Setting
- BHT Browser
- ApplicationLauncher
- BHT Test

Useful Software [Free/Practil]
- BHTPloting
- BHTManager
- BHTFinePloting
- BHT Browser
- BHT Booster
- BHT Monitor
- BHT Security Package
- BHT Setting
- BHT Browser
- BHT Booster
- BHT Monitor
- BHT Security Package
- BHT Setting

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>2D Code model</th>
<th>10 Code model</th>
<th>Wired (LAN/WAN) model</th>
<th>Wireless LAN model</th>
<th>Wireless WAN model</th>
</tr>
</thead>
</table>
| BHT-1700QRWB-1 | BHT-1700QRWB-2 | BHT-1700QRWB-P | BHT-1700QRWB-

Basic model

- 4.0 inch touch panel color LCD
- Android™ 7.1.2
- micro SDHC/SDXC Support
- micro SIM Support

[Components]*1:
- Device: Hand-belt
- 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.
### BHT-1600

**Handheld terminal with Android™**

**Robust, Large-Screen Smart Terminal with Android™ 6.0**

---

#### 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**

#### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Wireless LAN model</th>
<th>Wireless LAN + protector model</th>
<th>Wireless LAN + protector model (Wireless WAN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHT-1600QWB-AS6-S</td>
<td>BHT-1600QWB-AS6-RS</td>
<td>BHT-1600QWB-AS6-RS</td>
<td></td>
</tr>
</tbody>
</table>

**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)

**Battery**
- Main battery: Lithium-ion battery (2960 mAh)

**Dimensions**
- Main unit: 159 mm (W) * 88 mm (H) * 17.3 mm (D)
- Supply: Approx. 4 hours

**Connectivity**
- Bluetooth: Bluetooth Ver. 4.1 + BLE compliant
- Wireless LAN: IEEE802.11 a/b/g/n compliant

**Power Supply**
- Main battery: Lithium-ion battery (2960 mAh)
- Operating temperature: 0°C to 40°C

---

**About the strength of BHT-1600**

Watch a video to learn about the strength of BHT-1600.
Handheld terminal with BHT-OS

BHT-S40

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

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 high-density sensor

Specifications

- Operating temperature: 0 to 50 °C
- Storage temperature: -20 to 60 °C

Options

- 4-unit main unit
- Single-unit battery
- 4-unit battery charger
- Soft case
- Waist case
- Neck strap
- USB type C

Software [P.69-81]

Development/kitting/operation tools

BHT-BASIC 4.0 development Kit

BHT Term Emulator *1

BHT Manager *1

Terminal management/maintenance

BHT Manager *1

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-S40LAN (type communication unit)
  - CU-S40R (RS232C type communication unit)

Dimensions

- Battery (including the battery) Approx. 242 g (including BT2S), approx. 256 g (including BT2)

Card slot

- FAT32 compliant microSD or microSDHC (~32GB) × 1

Interfaces

- Wired connection: USB Version 2.0 (USB Type-C)

Output power

- Display: White LED

Scan confirmation

- 3 color (blue, red, and green) LEDs, speaker, and vibrator

Rules

- TG Code (5 chrs. x 13 lines (full-width) or 16 chrs. x 13 lines (half-width))
- Standard font (10 chrs. x 16 lines (full-width) or 20 chrs. x 16 lines (half-width))

Additional Functions

- Clock, speaker, vibrator, battery voltage indicator, keyboard backlight, and remote wake-up

Warranty

- Denso carries a one-year warranty.

*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 environment and conditions.

*5: Reading once per five seconds with the LCD backlight lit only during reading.

*6: One cycle (30 seconds): Reading (1 second), Bluetooth communication (sending 1KB through a continuous connection), screen update (367.9(W)×99.9(W)×66.5(H)mm), and power supply charge (1900 mAh battery)

*7: The waistpack case does not include belt.

*8: When connected to a PC.
**Handheld terminal with BHT-OS**

**BHT-S30**

Compact model in a pocketable size.

**Features**

- 2.4-inch compact screen
- Pocket size. Highly portable
- Lightweight model weighing approx. 219g, reducing the burden of long-hour operation (with BT25)
- Equipped with a new decode engine and high-density sensor, Stress-free reading of labels covered by wrapping film and deformed labels

**Specifications**

- **Display**
  - 2.4 inch color LCD
- **OS**
  - BHT-BASIC 4.0
- **Interface**
  - Bluetooth®/Wireless LAN
- **Card slot**
  - micro SD, micro SDHC Support

**Product Configuration**

- **Device**
  - BHT-S30-Q
  - BHT-S30-QW
  - BHT-S30B
  - BHT-S30BW

- **Battery**
  - BT25 (1500 mAh battery)
  - BT2 (3200 mAh battery)

- **USB Type-C**
  - 4.8 V 2 A battery charger
  - Single-unit battery charger

- **Software**
  - BHT-Manager
  - Bluetooth® connection

**Dimensions**

- **Unit**
  - Compact model

**Options**

- **Charging**
  - USB 2.0 (5 V 2 A)
  - Ethernet
  - RS232C

- **Power Supply**
  - AC adapter
  - AC adapter

**Software [P.69-81]**

**Development/kitting/operation tools**

- BHT-BASIC 4.0 development Kit
- BHT-Manager
- BHT Setting

**Terminal management/maintenance**

- BHT Manager

**Battery**

- 3200 mAh battery
- Approx. 2 hours
- Approx. 2 hours
- Approx. 2 hours
- Approx. 2 hours

**Power supply**

- Operating time
  - 5 to 95% non-condensing and non-rainy

**Warranty**

- One-year warranty

---

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

---

*3: 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.*

*4: It is necessary to register your product on our website to receive the one-year warranty. The consumable parts specified by Denso carry a one-year warranty.*

---

*5: Support only for Wireless LAN model.*
Handheld terminal with BHT-OS

**BHT-1500**

Achieving both an ultra-compact body and excellent visibility

- **Scanner**
  - 1D Codes
  - 2D Codes
  - OCR
  - IC card
  - RFID
  - Handheld terminal
  - Reader/Writer
  - Fixed type scanner

- **OS**
  - BHT-BASIC 4.0

- **Display**
  - 2.0 inch color LCD

- **Dimensions**
  - 68 mm (W) x 46 mm (H) x 23 mm (D)

- **Battery**
  - 3 AA alkaline batteries or 3 AAA rechargeable batteries
  - 70 hours
  - 117(D) x 368(W) x 115(H) mm

- **Environmental specifications**
  - Operating temperature: -5°C to 50°C
  - Operating humidity: 20% to 80% RH
  - Drop resistance: Up to 2.0 m drop on a concrete floor, 1.2 m drop on a concrete floor

- **Additional features**
  - Clock, buzzer, vibration, battery voltage indicators

- **Software**
  - BHT-BASIC 4.0 Development pack
  - BHT-BASIC 4.0 Remote Debugger
  - BHT Setting

- **Options**
  - Communication
  - Communication cable
  - Four-device charging
  - Soft case
  - Waist case
  - Neck strap

- **Developer kit**
  - BHT-BASIC 4.0 Development pack
  - BHT-BASIC 4.0 Remote Debugger
  - BHT Setting

- **Components**
  - Device
  - Hand strap
  - Operation guide
  - Batteries* provided with product

* BHT-1500 can be charged by connecting it to a USB charger or other power adapter, or an AC adapter. Please refer to the instruction manual for details.

*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 an AC adapter. Please refer to the instruction manual for details.

*3: The consumable parts specified by the three-year warranty.

*4: It is necessary to register your product on our website to receive the warranty.

*5: The consumable parts specified by the three-year warranty.

*6: Result obtained in a test under regular temperature is shown. Test value, not guaranteed.

*7: Result obtained in a test under regular temperature is shown. Test value, not guaranteed.

*8: Result obtained in a test under regular temperature is shown. Test value, not guaranteed.

*9: Result obtained in a test under regular temperature is shown. Test value, not guaranteed.

*10: The consumable parts specified by the three-year warranty.

*11: It is necessary to register your product on our website to receive the warranty.

*12: The consumable parts specified by the three-year warranty.

*13: It is necessary to register your product on our website to receive the warranty.

*14: The consumable parts specified by the three-year warranty.
**BHT-1400**

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

**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.

**Component**

- Device
- Hand strap with stylus
- Operation guide

*Battery and battery cover are not supplied with the product.*

**Display**

- 3.2 inch touch panel color LCD

**OS**

- Windows® Compact 7

**Interface**

- Bluetooth®/Wireless LAN

**Card slot**

- micro SDHC Support

**Specifications**

- 1D Code Reader
  - Operating time: 36 hours / 24 hours
  - Operating temperature: -20°C to 50°C
  - Drop resistance: 2.0 m drop on a concrete floor, 10 times each on all 6 sides (test result after a total 60 drops).

**Software**

- Development/kitting/operation tools
  - BHT Windows Simulator
  - Remote desktop Plug-in
  - Web browser Plug-in

- Application package for OCR introduction

**Useful Software**

- BHT Backup

**Dimensions**

- 62 mm x 44 mm x 28 mm

**Options**

- Communication Unit
  - CU-ART-14 (RS-232C)
  - CU-AL-14 (Ethernet)
  - CU-AU-14 (USB)

**Battery and battery cover are not supplied with the product.**

---

1. It is necessary to register your product on our website to receive Denso’s one-year warranty.
2. The consumption rate of energy differs depending on the type of data communication and the environment. Therefore, it is not possible to guarantee values for power consumption.
3. Display areas: 0.125 mm (1D Codes) and 0.167 mm (2D Codes).
4. The described operating time is the time required for one pass of reading, rewriting of screen, holding, and backlight on. Actual operating time varies depending on usage conditions.
5. Operating time is 16 hours, excluding backlight. 
6. It is necessary to register your product on our website to receive Denso’s one-year warranty.
7. This terminal is not recommended for use in environments with high incidence of electromagnetic waves, such as hospitals and operation rooms.
8. The described operating time is the time required for one pass of reading, rewriting of screen, holding, and backlight on. Actual operating time varies depending on usage conditions.
9. Batteries are being discharged. *6: Result obtained in a test under regular temperature is shown and not meant as a guarantee.
10. It is necessary to register your product on our website to receive Denso’s one-year warranty.
11. 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.
12. Bluetooth®: Bluetooth Ver2.1+EDR based class 2
13. Protection rating: IP65
14. Operating humidity: 20 to 80% RH (no condensation or frost)
15. Operating temperature: -20°C to 50°C
16. Drop resistance: 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).
17. Zero to 40ºC
Handheld terminal with BHT-OS

**BHT-1300** BHT-OS

Perfectly suitable for any situation

Running on BHT-OS, characterized by established reliability

---

**Product Configuration**

**Options**

- **1D code** model
  - BHT-1306B (Batch model)
  - BHT-1306BB (Bluetooth model)
  - BHT-1306BBWB (Bluetooth + Wireless LAN model)
  - BHT-1306Q (Thin battery only)
  - BHT-1306QBB (Bluetooth + Wireless LAN model)

- **2D code** model
  - BT-1306-C (Thin battery + battery cover)
  - BHT-1306-Q (Standard battery + battery cover)
  - B-130D (Dry cell adapter)
  - BHT-1306Q (Thin battery only)
  - BHT-1306QWB (Bluetooth + Wireless LAN model)

**Dimensions**

- **Charging**
  - Dimensions: 109.9(W) x 59.5(H) x 21.1(D) mm

**Software**

- **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
  - BHT Editor

**Operating System**

- BHT-OS

**Display**

- 1.5 inch color LCD

**OS**

- BHT-BASIC 4.0

**Card slot**

- micro SDHC Support

**Battery** and **battery cover** are not supplied with the product.

---

**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.

---

**Robustness**

**Drop Resistance:** Up to **2.0 m**
BHT-1300 Windows*-OS

Perfectly suitable for any situation
Versatile terminal running on Windows OS, usable in any environment

[Components]
- Device
- Hand strap with stylus pen
- Operation guide

-Battery
- Thin battery + battery cover
- Standard battery + battery cover
- Thin battery only
- Standard battery only

[Communication Unit]
- CU-BT-130LA (RS-232C)
- CU-BT-1311A (Ethernet)
- CU-BT-1321 (USB)

**Product Configuration**

<table>
<thead>
<tr>
<th>Component</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>CU-1301A (USB)</td>
</tr>
<tr>
<td>Interface</td>
<td>CU-1311A (Ethernet)</td>
</tr>
<tr>
<td>Read-Out</td>
<td>CU-1321 (USB)</td>
</tr>
</tbody>
</table>

**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.

**Display**
- 2.4 inch touch panel color LCD

**OS**
- Windows OS
- Windows OS Compact 7

**Bluetooth/Wireless LAN**
- Bluetooth
- 802.11b/g/n

**Card slot**
- micro SDHC Support

**Specifications**
- 1D Code model
- 2D Code model

**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
  - Version Manager
- Useful Software
  - BHT CE
  - BHT Backup

**Dimensions**
- **Height**
  - 106 (0x) = 110 (0x) mm
  - 2.0 mm(Cable)

**Power supply**
- AC adapter
- Battery charger

**Additional functions**
- Clock, speaker, vibration, battery voltage indicator, key backlight

**Encapsulation**
- Liquid crystal display (LCD) protective film

**Security**
- Encryption: WEP(40/128)/TKIP/AES
- User authentication: PSK/EAP-TLS/WPA2

**Battery**
- Full Speed conformant

**Dimensions**
- **Height**
  - 195 (0x) = 200 (0x) mm
  - 2.0 mm(Cable)

**Weight**
- Approx. 150 g (with thin battery)
- Approx. 220 g (with standard battery)

**Drop resistance**
- 2.5 m drop on a concrete floor (with head protector)

**Remote debugging**
- 15.0 m drop on a concrete floor, 10 times each on all 6 sides (test result after a total 60 drops).

**Security**
- Security — Infrastructure mode — Infrastructure mode
- Access method — IEEE802.11b/g/n — IEEE802.11b/g/n

**Battery**
- Full Speed conformant
- **Capacity**
  - 1.2 m drop on a concrete floor, 10 times each on all 6 sides (test result after a total 60 drops).
Handheld terminal with BHT-OS

**BHT-1306QWB-H**

**Temperature sensor model**

### Conventional method
- **Manufacturing process**
  - Acceptance of raw materials
  - Mixing
  - Filling
  - Packaging
  - Heat treatment
  - Cooling
- **Inspection**
  - Microbiological examination
  - Chemical analysis
  - Sensory test
  - Foreign matter inspection
- **Packaging for shipment**
  - If the product is found to be defective during an inspection, measures are implemented here.
  - Stop shipment
  - Recall products

### HACCP method [example]
- **New materials**
- **Mixing**
- **Filling**
- **Packaging**
- **Heat treatment**
- **Cooling**
- **Shipments**
- A problem is found based on the monitoring of critical control points, improvement measures are implemented immediately.

### Specification

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Model</th>
<th>Temperature sensor model</th>
<th>BHT-1306QWB-H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display</strong></td>
<td></td>
<td>Liquid crystal dot matrix display (color)</td>
<td>Core thermometer + [Fixing cover]</td>
</tr>
<tr>
<td><strong>Environmental requirements</strong></td>
<td></td>
<td>Operating temperature: -20°C to 50°C</td>
<td>Operating humidity: 20 to 90% RH (no condensation or frost)</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td></td>
<td>BHT-BASIC4.0 Transfer Utility (EXE / DLL Pack)</td>
<td>Software for setting</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td></td>
<td>Main battery: A lithium-ion battery or three AAA alkaline dry cells</td>
<td>Lithium-ion battery or three AAA alkaline dry cells (rechargeable is required)</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
<td>90 mm × 38.5 mm × 42 mm²</td>
<td>22 mm x 38.5 mm x 42 mm²</td>
</tr>
</tbody>
</table>

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

### Robustness

**Drop Resistance**: Up to 2.5 m

**Protection Class**: IP 54

**Magnesium frame for class-leading robustness**

**Interface**

**Bluetooth**

**Options**

**Weight**

**Approx. 80 g**

### Handy scanner

**SF1**

**Small and robust scanner**

**Scanner**

**SF1-BB**

**SF1-QR**

**Dimensions**

**SF1-BB**

**SF1-QR**

**Features**

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

**Charging**

- Charging time: 2.5 Hours

**Power supply**

- AC adapter

**Charger**

- BA20-RU

**Components**

- BA Setting²

**Software**

- Software for setting QR Code Setting²

** Specifications**

- Model: SF1-BB
  - 1D Code model
  - 2D Code model
  - Handheld terminal
  - Handy scanner
  - Fixed type scanner
  - Wearable scanner
  - RFID
  - Reader/Writer
  - Tag

** Packing information**

- Make sure the settings are correct for the size of the paper and the type of scanner.

**Weight (net)**

- Approx. 80 g
## Handy scanner

### SE1

**Pocket-size model**

---

**Features**

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

---

**Options**

- Single device charger: CH-SE11
- Four-device charger: CH-SE14

---

**Software**

- Software for setting: QR_kbif, Scan Tune App, BA Setting, SQRC Setting

---

**Bluetooth Communication Unit**

- BA20-RU

---

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>BA20-RU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td>Bluetooth Ver 2.1+EDR based class 2</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>Supply from the connection</td>
</tr>
</tbody>
</table>

---

**Scanner**

<table>
<thead>
<tr>
<th>Model</th>
<th>SE1-BB</th>
<th>SE1-QR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading system</strong></td>
<td>Advanced Scan Flex (CCD)</td>
<td>QR Code, micro QR Code, 1D Code, SQRC, PDF417, micro PDF417, Datamatrix (ECC200), Aztec, GS1 Composite, MaxiCode</td>
</tr>
</tbody>
</table>

---

**Dimensions**

- 27 mm x 41 mm

---

**Battery**

- Approx. 110 g

---

**Protection Class**

- IPX2

---

**Drop Resistance**

- Up to 1.2 m
**GT20**

Robust, high-spec model

**Scanner**

![Scanner Image]

**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.

**Specifications**

- **Model**: GT20B-SM(R) GT20B-SM(U) GT20B-SB-V2 GT20Q-SM(R) GT20Q-SM(U) GT20Q-SB-V2
- **Communication**: RS-232C, USB
- **Power supply**: AC adapter
- **Battery**: Built-in battery
- **USB port**: USB 2.0

**Interface**

- **USB**: Type A
- **Connectors**: Dsub-9S

**Dimensions**

- **Weight**: Approx. 180 g

**Protection Class**

- **IP 65**

**Drop Resistance**: Up to 2.0 m

**Options**

- **Charger**: For RS-232C model
- **Charging time**: 2.5 hours

**Software**

**Software for setting**

- QR_kbif
- Scanner Setting 2
- SQRC Setting
- BA Setting

**Options**

- BA20-RU

---

*For Bluetooth model. Body only.*

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: For Bluetooth model only.

---

**Notes**

- 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.

---

**Remarks**

- The warranty covers only the body and not the cable or battery.

---

**Accessories**

- AC adapter (For RS-232C model)
- Interface cable (2 m)
- Communication interface cable (2 m)
- Device (with battery)
- Charger
- Hand strap
- Operation guide
Host — RS-232C/USB *2

BA — Bluetooth Ver.2.1

Comes in two models:

- RS-232C model
- USB model

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

Software for setting:

- QR_kbif Scanner Setting
- BA Scanner Setting
- RSQRC Setting
- BA Setting

Specifications:

<table>
<thead>
<tr>
<th>Component</th>
<th>RS-232C model</th>
<th>USB model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>63 mm x 63 mm</td>
<td>80 mm x 158 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 105 g</td>
<td>Approx. 200 g</td>
</tr>
<tr>
<td>Interface</td>
<td>USB/RS-232C</td>
<td>USB</td>
</tr>
<tr>
<td>Bluetooth</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Robustness</td>
<td>Drop Resistance: Up to 2.0 m</td>
<td></td>
</tr>
</tbody>
</table>

[Components]

- RS-232C model - USB model
  - Device
  - Interface cable
  - AC adapter
  - Charger
  - Hand strap
  - Operation guide

- Bluetooth model
  - Device (with battery)
  - Charger (CH-AT10L)
  - AC adapter
  - Hand strap
  - Operation guide
  - BA20-RU is sold separately.

- Software

  - Free software available for easy setting
  - Notional time: 28 hours

  - Operating time: Approx. 28 hours

  - **: Two interfaces are supported (USB keyboard [HID] and USB-COM). The interface is set to USB-COM at shipment.

*1: Two interfaces are supported (USB keyboard [HID] and USB-COM). The interface is set to USB-COM at shipment.

*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.

*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).

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

*6: 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.

*7: 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.
**Handy scanner AT30**

2D scanners also support "touch scanning"

---

**Handy scanner SH1**

A compact model that is easy to keep clean

---

### Specification

<table>
<thead>
<tr>
<th>Model</th>
<th>1D Code model</th>
<th>2D Code model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Features</strong></td>
<td><strong>Tech. Info.</strong></td>
<td><strong>Coding Info.</strong></td>
</tr>
<tr>
<td><strong>Handy scanner AT30</strong></td>
<td><strong>Tech. Info.</strong></td>
<td><strong>Coding Info.</strong></td>
</tr>
<tr>
<td><strong>Handy scanner SH1</strong></td>
<td><strong>Tech. Info.</strong></td>
<td><strong>Coding Info.</strong></td>
</tr>
</tbody>
</table>

---

### Dimensions

<table>
<thead>
<tr>
<th>Dimension (mm)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>20.0</td>
</tr>
<tr>
<td>Height</td>
<td>164.9</td>
</tr>
<tr>
<td>Depth</td>
<td>63.4</td>
</tr>
</tbody>
</table>

---

### Components

- Device
- Interface cable
- AC adapter

*Device availability depends on the model of the PC or USB hub.

---

### Scan Type

- **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)
- **2D Codes**: QR Code, SQRC, Micro QR Code, Data Matrix (ECC200), PDF417, Micro PDF417, MaxiCode, Aztec, GS1 Composite

---

### Interface

- USB

---

### Options

- Holder
- Hands-free stand
- Software for setting

---

### Robustness

- *Drop Resistance: Up to 2.0 m*

---

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Interface</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Handy scanner AT30</strong></td>
<td><strong>USB</strong></td>
<td><strong>Handy scanner SH1</strong></td>
</tr>
<tr>
<td><strong>Robustness</strong></td>
<td><strong>Software</strong></td>
<td><strong>Features</strong></td>
</tr>
<tr>
<td><strong>Drop Resistance: Up to 2.0 m</strong></td>
<td><strong>Software for setting</strong></td>
<td><strong>Slim, compact model ideal for use in confined spaces</strong></td>
</tr>
</tbody>
</table>

---

### Notes

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

---

### Components

- Device
- Operation guide

---

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>1D Code model</th>
<th>2D Code model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scanner</strong></td>
<td><strong>Tech. Info.</strong></td>
<td><strong>Coding Info.</strong></td>
</tr>
<tr>
<td><strong>Handy scanner SH1</strong></td>
<td><strong>Tech. Info.</strong></td>
<td><strong>Coding Info.</strong></td>
</tr>
</tbody>
</table>

---

### Drop Resistance

- **Up to 2.0 m**

---

### Specifications

<table>
<thead>
<tr>
<th>Dimension (mm)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>1500</td>
</tr>
<tr>
<td>Height</td>
<td>63.4</td>
</tr>
<tr>
<td>Depth</td>
<td>32.0</td>
</tr>
</tbody>
</table>

---

### Notes

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

---

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>1D Code model</th>
<th>2D Code model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scanner</strong></td>
<td><strong>Tech. Info.</strong></td>
<td><strong>Coding Info.</strong></td>
</tr>
<tr>
<td><strong>Handy scanner SH1</strong></td>
<td><strong>Tech. Info.</strong></td>
<td><strong>Coding Info.</strong></td>
</tr>
</tbody>
</table>

---

### Drop Resistance

- **Up to 1.5 m**
Handy scanner
HC76
Contact scanning model for New POS

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

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Device</th>
<th>Operation guide</th>
</tr>
</thead>
</table>

Micro QR Code® contact scanning model

Scanner | Weight | Interface
--- | --- | ---
Approx. 178 g | USB/RS-232C |

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Device</th>
<th>Operation guide</th>
</tr>
</thead>
</table>

Handy scanner
GT20QD
Designed for direct part marking on metallic workpieces

Scanner | Weight | Interface | Robustness
--- | --- | --- | ---
Approx. 210 g | USB/RS-232C | Protection Class IP 65® | Drop Resistance: Up to 2.0 m

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Device</th>
<th>Interface cable</th>
<th>Operation guide</th>
</tr>
</thead>
</table>
Fixed type scanner

QK30

High-speed scanning of mobile QR Code®

Scanner

[Image: QR Code]

Weight

Approx. 170 g

Interface

USB/RS-232C

Options

Silicone cover

Specifation

Model

QK30-U

QK31-U

QK31-R

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.

Software

Software for setting

BDR, rsbf

Scanner Setting 2D

BSQRC Setting

Features

DENSO WAVE’s smallest and lightest ever integral scanner.

3.5 cm case dimensions allows installment 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

3 Scanner Setting 2D, BSQRC Setting

QM30

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

Scanner

[Image: QR Code]

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

8 Scanner Setting 2D, BSQRC Setting

Specifications

Model

QM30-SU

QM30-SS

QM30-CS

Enclosure color

Black

Options

Silicone case for QK30 series (Black)

Silicone cover for QK30 series (Close)

* QK31 does not support.

Dimensions

45.0 mm

20.0 mm

10.0 mm

Rated nameplate

35.0 mm

34.4 mm

18.0 mm
**Fixed type scanner**

**QB33**

**Compact installation and built-in model**

**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**

<table>
<thead>
<tr>
<th>Model</th>
<th>2D Code model</th>
<th>USB model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure color</td>
<td>White</td>
<td>QB33-SR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>QB33-SU</td>
</tr>
<tr>
<td>Scanner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Readable codes</td>
<td>2D Codes: QR Code, micro QR Code, SQRC, micro PDF417, MaxiCode, DataMatrix(EC200), Aztec, GS1 Composite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1D Codes: EAN-13/15/12/94/15, EAN-13/12/94/15, Interleaved 2 of 5, Codabar(NW-7), CODE39, CODE93, CODE1128, GS1-128/154, GS1 DataBar(RS5)</td>
<td></td>
</tr>
<tr>
<td>Minimum resolution</td>
<td>2D Codes: 0.20 mm</td>
<td>1D Codes: 0.15 mm</td>
</tr>
<tr>
<td></td>
<td>Scanning reference position</td>
<td>40 mm</td>
</tr>
<tr>
<td></td>
<td>Lighting</td>
<td>1 color(Blue, Green, Red)</td>
</tr>
<tr>
<td></td>
<td>Scan confirmation</td>
<td>Visual (3 color LED), acoustic (signal sound) and tactile (vibration)</td>
</tr>
<tr>
<td>Communication interface</td>
<td>2D Code model: RS-232C (mini D-sub5PIN)</td>
<td>USB model: USB</td>
</tr>
<tr>
<td>Power</td>
<td>Power rating: 5V</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power supply: Supplied from the connection target</td>
<td></td>
</tr>
</tbody>
</table>

**Additional functions**
- Operation button: 1 button (magic key)

**Environmental requirements**
- Operating temperature: -20°C to 50°C
- Protection range: IP65

**Weight**
- Approx. 120 g

---

**Fixed type scanner**

**FD2**

**New**

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

**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
- QR_kbif
- Scanner Setting
- SQRC Setting

**Specification**

<table>
<thead>
<tr>
<th>Model</th>
<th>Standard type</th>
<th>Wide type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2D Codes: QR Code, micro QR Code, SQRC, micro PDF417, MaxiCode, DataMatrix(EC200), Aztec, GS1 Composite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1D Codes: EAN-13/15/12/94/15, EAN-13/12/94/15, Interleaved 2 of 5, Codabar(NW-7), CODE39, CODE93, CODE1128, GS1-128/154, GS1 DataBar(RS5)</td>
<td></td>
</tr>
<tr>
<td>Minimum resolution</td>
<td>2D Codes: 0.06 mm</td>
<td>1D Codes: 0.08 mm</td>
</tr>
<tr>
<td></td>
<td>Scanning distance</td>
<td>Reading sight</td>
</tr>
<tr>
<td></td>
<td>400~1200 mm</td>
<td>115~1200 mm</td>
</tr>
<tr>
<td></td>
<td>600~720 mm</td>
<td>384~407 mm</td>
</tr>
<tr>
<td></td>
<td>Adjustment</td>
<td>Auto focus, lighting, filter auto tuning</td>
</tr>
<tr>
<td></td>
<td>Number of scan conditions</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Communication interface</td>
<td>Ethernet RJ-45, USB</td>
</tr>
<tr>
<td></td>
<td>Industrial protocols</td>
<td>Ethernet/RS-485, CAN</td>
</tr>
<tr>
<td>Power supply</td>
<td>Operating temperature</td>
<td>DC24V, 10A</td>
</tr>
<tr>
<td></td>
<td>Protection range</td>
<td>IP65</td>
</tr>
<tr>
<td></td>
<td>Vibration resistance</td>
<td>Oscillation frequency 10 to 500 Hz, sweep: 11 mm, half amplitude: 0.75 mm (acceleration upper limit: 100 m/s²)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 120 g</td>
<td>Approx. 150 g</td>
</tr>
</tbody>
</table>

---

**Components**

- Device
- Operation guide

---

**Product Line Up**

- 1D Codes · 2D Codes
- Handheld terminal
- Handy scanner
- Fixed type scanner
- Wearable scanner
- RFID
- Handheld terminal
- Reader/Writer
- Tag
- IC card
- Reader/Writer
- OCR
- Handheld terminal
- Software for setting
- QR Code solution
Wearable SF1
Tough and clean wearable scanner

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).

Scanner
- Read system: Area sensor
- Readable codes: 2D Codes: QR Code, 50K, Micro QR Code, Standard 128, 50K, PDF417, Micro PDF417, Maxicode, Aztec, GS1 Composite
- 1D Codes: EAN-13/8, EAN-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, 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: SSP, MIC, SSP for DSS
- Power supply: Lithium-ion battery
- Operating time: 24 hours
- Charging time: 2.5 hours
- Drop resistance: Up to 2.5 m

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

Robustness
- Protection Class: IP 54
- Drop Resistance: Up to 2.5 m

Options

Software
- Software for setting
  - QR_kbif: DENSO SF1 SDK for iOS
  - Scanner Setting 2D: SQRC Setting, BA Setting

Specifications for main unit

<table>
<thead>
<tr>
<th>Model</th>
<th>2D Code model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF1-QBi-T</td>
<td>Dark gray</td>
</tr>
<tr>
<td>SF2-QBi-T</td>
<td>Dark gray</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Exterior color</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF1-QBi-T</td>
<td>Dark gray</td>
</tr>
<tr>
<td>SF2-QBi-T</td>
<td>Dark gray</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Trigger switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF1-QBi-T</td>
<td>Button type/Touch type</td>
</tr>
<tr>
<td>SF2-QBi-T</td>
<td>Button type/Touch type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>AW2-001-R</td>
<td>Black and cyan (blue)</td>
</tr>
<tr>
<td>AW3-001-R</td>
<td>Black and cyan (blue)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Trigger switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>AW2-001-R</td>
<td>Button type</td>
</tr>
<tr>
<td>AW3-001-R</td>
<td>Button type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF1-QBi-T</td>
<td>Approx. 50 g</td>
</tr>
<tr>
<td>SF2-QBi-T</td>
<td>Approx. 50 g</td>
</tr>
<tr>
<td>AW2-001-R</td>
<td>Approx. 50 g</td>
</tr>
<tr>
<td>AW3-001-R</td>
<td>Approx. 50 g</td>
</tr>
</tbody>
</table>

*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.
RFID Handheld terminal with BHT-OS

BHT-615QUMWB

Specified low-power radio station model

**Software [P.69-81]**

[Components]
- Device: Battery (20-20L)
- Hand strap
- Operation guide

**Product Configuration**

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

**Specifications**

- Model: BHT-615QUMWB
  - Black
  - White

- Memory/flash memory: 32 MB(approx. 23 MB for user area)

- Display:
  - 2.8 inch color LCD

- Operating time: 21 hours *

**Options**

- Single battery charger
- For battery charger
- Single battery charger
- Four battery charger
- Soft case
- Waist case

**Software**

- BHT-OS

**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.

**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)

**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.

**Examples of Use**

- Visualization of production status
- Rewriting returnable box slips

**Software**

- Development/operation tools
  - URF4-M-ERU

**Specifications**

- Model: URF55-M-ERU
  - Data output interface: RS-232C, USB
  - Communication interface: Ethernet

- **UR50**
  - Reading range: up to 1000 mm
  - Resolution: 0.125 mm
  - Codes: QR Code, Micro QR Code, SQRC, DataMatrix (ECC200), PDF417, Micro PDF417

- **Software**
  - BHT-BASIC 4.0

**Supported Protocols**

- TCP, UDP, EtherNet/IP

**Dimensions**

- Width: 121 mm
- Height: 124 mm
- Depth: 51.2 mm

**Supported countries**

- Japan

**Supplementary notes**

- *1: User file area includes font file area(approx. 400 kb) *2: 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.

---

**Related terms and type**

- Handheld terminal
- Wearable scanner
- Hand strap
- QR Code
- ISO/IEC 18000-63 (GS1 EPC Gen2) compliant

**Development/operation tools**

- URF4-M-ERU

**Software for setting**

- Scanner Setting F

**Examples of Use**

- Visualization of production status
- Rewriting returnable box slips

**Software**

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  - URF4-M-ERU

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- Wearable scanner
- Hand strap
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---

**Related terms and type**

- Handheld terminal
- Wearable scanner
- Hand strap
- QR Code
- ISO/IEC 18000-63 (GS1 EPC Gen2) compliant

**Development/operation tools**

- URF4-M-ERU

**Software for setting**

- Scanner Setting F

**Examples of Use**

- Visualization of production status
- Rewriting returnable box slips

**Software**

- Development/operation tools
  - URF4-M-ERU

**Specifications**

- Model: URF55-M-ERU
  - Data output interface: RS-232C, USB
  - Communication interface: Ethernet

- **UR50**
  - Reading range: up to 1000 mm
  - Resolution: 0.125 mm
  - Codes: QR Code, Micro QR Code, SQRC, DataMatrix (ECC200), PDF417, Micro PDF417

- **Software**
  - BHT-BASIC 4.0

**Supported Protocols**

- TCP, UDP, EtherNet/IP

**Dimensions**

- Width: 121 mm
- Height: 124 mm
- Depth: 51.2 mm

**Supported countries**

- Japan

**Supplementary notes**

- *1: User file area includes font file area(approx. 400 kb) *2: 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.

---

**Related terms and type**

- Handheld terminal
- Wearable scanner
- Hand strap
- QR Code
- ISO/IEC 18000-63 (GS1 EPC Gen2) compliant

**Development/operation tools**

- URF4-M-ERU

**Software for setting**

- Scanner Setting F

**Examples of Use**

- Visualization of production status
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- **Software**
  - BHT-BASIC 4.0

**Supported Protocols**

- TCP, UDP, EtherNet/IP

**Dimensions**

- Width: 121 mm
- Height: 124 mm
- Depth: 51.2 mm

**Supported countries**

- Japan

**Supplementary notes**

- *1: User file area includes font file area(approx. 400 kb) *2: 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.
UR40 SERIES

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

Features

High-speed reading rate of 600 tags/second*1 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.

Examples of Use

Such as
Reliable inspection of shipping and receiving
Rewriting returnable box slips

Options

Software for setting
Scanner Setting F

Connections

USB/Ethernet

Software for setting

UR20 SERIES

Ultra-thin stationary scanner that can be installed anywhere

Software Control Command DLL File

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

Options

Examples of Use

Coaxial cable cable (5 m/10 m) CBAN-CTNC5000/10000
USB cable (1.5 m) CB00-US1500/4A-5B-01
Ethernet cable (2 m) 1585D-M4UBJM-2
External antenna URAN-40H1
SP1

High-speed reading, RF tag reading distance\(^1\)
Approx.8m 1W high-output handy scanner

**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 operating conditions.
\(^2\): Scanning distance is a reference value and varies depending on the actual operating environment.

**Software (P.69-81)**

**Development/kitting/operation tools**
DENSO SP1 SDK for Android/iOS/Kamxin®
RF Edge (Please see page (P.80) for details.)

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

**Specification**

<table>
<thead>
<tr>
<th>Component</th>
<th>SP1-QUBi</th>
<th>+[Battery]</th>
<th>+[Communication Unit]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device</strong></td>
<td>BT-SP1LA-C (Standard battery + battery cover)</td>
<td>BT-SP1LC (High-capacity battery + battery cover)</td>
<td>CU-SP1A (USB)</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Options</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication unit</td>
<td>USB 2.0 (Full speed compliant)</td>
</tr>
<tr>
<td>4 serial unit rechargers</td>
<td>Full speed compatible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Charging Time</th>
<th>Charging Unit</th>
<th>Battery Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5/7 hours</td>
<td>CH-1B04 (for standard battery)</td>
<td>15 hours (80,000 tags)</td>
</tr>
<tr>
<td>Approx. 4 hours</td>
<td>CH-SP104A (400 g)</td>
<td>10 hours (10,000 tags)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>AC adapter</th>
<th>DC adapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply from connected device</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**Battery**

<table>
<thead>
<tr>
<th>Battery</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-SP1L-C (High-capacity battery + battery cover)</td>
<td>CU-SP1A (USB)</td>
</tr>
</tbody>
</table>

**Charging**

<table>
<thead>
<tr>
<th>Charging Cable</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBBHTUS500/CTA-A</td>
<td>CH-SP104A</td>
</tr>
<tr>
<td>EA-SP1-A1800/EA-SP1-AM80</td>
<td>CH-SP1L4</td>
</tr>
<tr>
<td>EA-SP1-A5</td>
<td>CH-SP1L4</td>
</tr>
<tr>
<td>QLA-UNI-2</td>
<td>CH-SP1L4</td>
</tr>
<tr>
<td>SBSP1</td>
<td>CH-SP1L4</td>
</tr>
</tbody>
</table>

**Charging Supply**

- Depend on the connected supply current
- Requires the shoulder strap to be attached and operated

**Software**

- Bluetooth®
- 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 operating conditions.
\(^2\): Scanning distance is a reference value and varies depending on the actual operating environment.

**Software (P.69-81)**

**Development/kitting/operation tools**
DENSO SP1 SDK for Android/iOS/Kamxin®
RF Edge (Please see page (P.80) for details.)

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

**Specification**

<table>
<thead>
<tr>
<th>Component</th>
<th>SP1-QUBi</th>
<th>+[Battery]</th>
<th>+[Communication Unit]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device</strong></td>
<td>BT-SP1LA-C (Standard battery + battery cover)</td>
<td>BT-SP1LC (High-capacity battery + battery cover)</td>
<td>CU-SP1A (USB)</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Options</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication unit</td>
<td>USB 2.0 (Full speed compliant)</td>
</tr>
<tr>
<td>4 serial unit rechargers</td>
<td>Full speed compatible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Charging Time</th>
<th>Charging Unit</th>
<th>Battery Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5/7 hours</td>
<td>CH-1B04 (for standard battery)</td>
<td>15 hours (80,000 tags)</td>
</tr>
<tr>
<td>Approx. 4 hours</td>
<td>CH-SP104A (400 g)</td>
<td>10 hours (10,000 tags)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>AC adapter</th>
<th>DC adapter</th>
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- RF scanning distance\(^2\) Approx. 8 m
- Easy connection to smart devices
- Supports Android™ and iOS (MFi certified)
**RFID Vocs scanner**

**UR30 SERIES**

Portable and stationary RFID

---

**UR31**

---

**Product Configuration**

- **[Device]**
  - UR31-MC-01
  - CH-UR31
  - BA20-RU

- **[Battery]**
  - BT-110L
  - CH-UR31
  - BA20-RU

- **[Rechargers]**
  - CBUR-PS3000/3-NC-01
  - BA20-RU

- **[Additional Modules]**
  - Bluetooth Communication Unit

---

**Features**

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

---

**Software**

- Software for setting
  - SE1-BUB-C
  - BA Setting

---

**RFID Reader/Writer**

**SE1-BUB-C**

Pocket RFID

---

**Scanner**

- **Dimensions**
  - 128 mm x 72 mm x 38 mm

- **Weight**
  - Approx. 350 g

- **Interface**
  - Bluetooth

- **Robustness**
  - Drop Resistance: Up to 2.0 m

---

**Options**

- **Device charger**
  - Communication unit

---

**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

---

**Technical Specifications**

- **Scanning System**
  - Advanced scan plus (CCD)

- **Readable and recordable RF tag**
  - ISO/IEC18000-6C(EPC Gen2)-Supported Tag

- **Communication Interface**
  - Bluetooth v2.1+EDR based Class2

- **Power Supply**
  - AC adapter

- **Charging**
  - Charging time: 4.5 hours

- **Operating Temperature**
  - Operating Temperature: 0 ~ 40°C

---

**Supplied Accessories**

- **Hand strap**

---

* BA20-RU/BA11-RKU is sold separately.

---

**Notice**

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

**E-paper tag** NEW

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

Manufactured by: Sensortag Assembly Group Co., LTD

---

**Navigation TAG® NEW**

LED-equipped UHF-band RF tag

Lights up what you’re looking for

Manufactured by: Sensortag Assembly Group Co., LTD

---

### Interface

**RFID tag**

- **UHF**

**E-paper tag**

- **2.9 inch Monochrome LCD**

**LED-equipped UHF-band RF tag**

- **2.9 inch Monochrome LCD**

### Robustness

**RFID tag**

- **Protection Class IP 54**

**E-paper tag**

- **Protection Class Equivalent to IP53**

### Features

**RFID tag**

- 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

**E-paper tag**

- Optimizing/ Automating replacement of slips.

- Reducing use of papers for slips.

### Examples of Use

**RFID tag**

- **Optimizing/ Automating replacement of slips.**

- **Reducing use of papers for slips.**

**E-paper tag**

- **Optimizing/ Automating replacement of slips.**

- **Reducing use of papers for slips.**

### Specification

**RFID tag**

- **Target model:** SP1, UR50, UR40

- **Communication distance:**
  - Inventory: Approx. 160 cm
  - Update image: Approx. 60 cm

- **Panel’s life:** 1,000,000 times

- **Memory:**
  - EPC/UII: 480 bit (60 byte)
  - User area: 61440 bit (7680 byte)

- **Drop durability:** 1.2 m x once

- **LED color:** Red

**E-paper tag**

- **Operating 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:**
  - 100 days

- **Writing/reading distance:** Up to 8 m

- **Operational temperature:** -30~60°C

- **Protection rating:** Equivalent to IP53

### Examples of Use

**RFID tag**

- **Optimizing/ Automating replacement of slips.**

- **Reducing use of papers for slips.**

**E-paper tag**

- **Optimizing/ Automating replacement of slips.**

- **Reducing use of papers for slips.**

### Software

**RFID tag**

- **Development/operation tools:**

- **DENSO SP1 SDK for Android**

**E-paper tag**

- **Development/operation tools:**

- **DENSO SP1 SDK for Android**

---

**RFID tag**

- **Target model:** [Handheld terminal with Android™]

- **Model:** SP1

- **Operating time:**
  - 100 days

- **Communication distance:**
  - Up to 8 m

- **Operational temperature:** -30~60°C

- **Protection rating:** Equivalent to IP53

- **Drop durability:** 1.2 m x once

**E-paper tag**

- **Target model:**

- **Model:** SP1, UR50, UR40

- **Battery:**
  - 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 temperature:** -30~60°C

- **Protection rating:** Equivalent to IP53

---

**RFID tag**

- **Tag communication method:** UHF

- **Frequency range:** 860~960 MHz (*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:**
  - 100 days

- **Communication distance:**
  - Up to 8 m

- **Operational temperature:** -30~60°C

- **Protection rating:** Equivalent to IP53

- **Drop durability:** 1.2 m x once

**E-paper tag**

- **Tag communication method:** UHF

- **Frequency range:** 860~960 MHz (*Global band*)

- **Power supply:**
  - Battery (button cell: CR2032)

- **Operational time:**
  - 100 days

- **Communication distance:**
  - Up to 8 m

- **Operational temperature:** -30~60°C

- **Protection rating:** Equivalent to IP53

- **Drop durability:** 1.2 m x once
IC Card reader/writer

QK30-IC

IC cards + mobile QR Code

[Components]
- Device
- Operation guide

Specifications

Model | QK30-IC

- **IC card**
  - Reader/writer

- **Scanner**
  - Interface: USB

- **Weight**
  - Approx. 300 g (incl. cable)
  - Approx. 170 g (excl. cable)

- **Dimensions**
  - 125 mm × 54 mm × 26 mm

Options

- Silicone cover
- Silicone cover for QK30 series (Blue) *
- Silicone cover for QK30 series (Black) *
- Silicone cover for QK30 series (Clear) *

Software

- **Software for setting**
  - QR_kbif
  - Scanner Setting 2D
  - QR Kbif Setting

- **IC card-related**
  - Software for setting
  - QR_kbif

Features

- **Supports a wide range of scanning target forms**
  - for an expanded range of applications
- **NFC compatible**

Features

- **Quick scanning**
  - of passport information and images

Software

- **Software for setting**
  - OCR Fixed type scanner
  - FC1-QOPU

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).

OCR Fixed type scanner

FC1

Quick scanning of passport information and images

Specifications

Model | FC1-QOPU

- **Readable codes**
  - 2D Codes
  - QK30-IC
  - QK31-IC
  - EAN-13/UAN-13(B), UPC-A/E, Interleaved 2 of 5 (ITF), Codabar(NW-7), CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS), GS1 Composite, MaxiCode, ISO/IEC 14443 Type A/B

- **Scanner**
  - Interface: USB 2.0 conforment (COM, HID)
  - connector type USB connector mini B
  - Visual (1 color LED)
  - Scan confirmation
  - 0~5 mm

- **Operating temperature**
  - 0~50°C

- **Operating humidity**
  - 10~90% RH (no condensation or frost)

Options

- Silicone cover
- Silicone cover for QK30 series (Blue) *
- Silicone cover for QK30 series (Black) *
- Silicone cover for QK30 series (Clear) *

Software

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

- **IC card-related**
  - Software for setting
  - QR_kbif

Features

- **Streamlines the task of photocopying passports at accommodation facilities**

Software

- **Software for setting**
  - QR_kbif
  - Scanner Setting OCR
  - QR Kbif Setting

Specifications

Model | FC1-QOPU

- **Readable codes**
  - 2D Codes
  - QK30-IC
  - QK31-IC
  - EAN-13/UAN-13(B), UPC-A/E, Interleaved 2 of 5 (ITF), Codabar(NW-7), CODE93, CODE128, GS1-128(EAN-128), GS1 DataBar(RSS), GS1 Composite, MaxiCode, ISO/IEC 14443 Type A/B

- **Scanner**
  - Interface: USB 2.0 conforment (COM, HID)
  - connector type USB connector mini B
  - Visual (1 color LED)
  - Scan confirmation
  - 0~5 mm

- **Operating temperature**
  - 0~50°C

- **Operating humidity**
  - 10~90% RH (no condensation or frost)

- **Dimensions**
  - 135(W)×112(D)×99(H) mm

Options

- Silicone cover
- Silicone cover for QK30 series (Blue) *
- Silicone cover for QK30 series (Black) *
- Silicone cover for QK30 series (Clear) *

Software

- **Software for setting**
  - QR_kbif
  - Scanner Setting OCR

- **IC card-related**
  - Software for setting
  - QR_kbif
QK30-OP-U

Instantaneous scanning of passports

Information on maintenance 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.

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

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/M60/540/S30/1800/1700/1500/1400/1300

* Prior application via the website is required.

Bluetooth® Communication unit

BA20-RU

Target model:
A127Q-6B/SE1/SET-BUB/CFS1/Wearable SF1/UR31-MC01/G120B-5B-V2/G120Q-5B-V2

<table>
<thead>
<tr>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please select use interface type. (Only needs to connect non built-in Bluetooth device)</td>
</tr>
</tbody>
</table>

RS-232C set

<table>
<thead>
<tr>
<th>Transmission unit</th>
<th>RS-232C Cable (CBBA-RS2000/9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-232C Cable (CBBA-RS2000/9-1)</td>
<td></td>
</tr>
</tbody>
</table>

K/E set

<table>
<thead>
<tr>
<th>Transmission unit</th>
<th>Keyboard I/F cable (CBBA-KYS2000/6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(CBBA-S2000/4)</td>
<td></td>
</tr>
</tbody>
</table>

USB-COM set

<table>
<thead>
<tr>
<th>Transmission unit</th>
<th>USB cable (CBBA-U2000/4)</th>
</tr>
</thead>
</table>

*1: The AC adaptor is not included. Please refer to section AC Adaptor when using the RS-232C interface cable.

<table>
<thead>
<tr>
<th>*</th>
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</tr>
</thead>
</table>

*1: Please refer to section AC Adaptor when using the RS-232C interface cable.

Software for setting

QR_kbif

Software for setting 2D

OCR

Software for setting 2D

Readout

[Components]

- Device
- 2A-QK30 (Attachment)
- Operation guide

[Specifications]

**QK30-OP-U**

OCR Fixed type scanner

**Features**

- Outstanding scanning performance simplifies duty-free procedures

**Operating humidity**

10~90% RH (no condensation or frost)

**Operating temperature**

-5~50°C

**Protection rating**

IPX2

**Cable**

1.5 m

**Connector type**

USB connector (A type)

**Interface**

USB1.1 conformant (COM, HID) *3

**Scan confirmation**

Visual (3 color LED) and acoustic (signal sound)

**Dimensions**

131(W)×94(D)×81(H) mm

**Weight (incl. cable and attachment)**

Approx. 350 g

**Coverage**

- 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)
- 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 DataBarRRSS

**Interface**

USB

**Performance**

**Communication interface**

Supplied From the connection target *2

**Power**

Usable under normal conditions of use

**Environmental Performance**

Protection rating: IPX2

Operating temperature: -5~50°C

Operating humidity: 10~90% RH (no condensation or frost)

[Components]

- Operation guide
- EA-QK30 (Attachment)

**Warranty period extension service**

According to the device.

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.

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Applicable products for warranty period extension from one to three years

BHT-M80/M70/M60/540/S30/1800/1700/1500/1400/1300

* Prior application via the website is required.

**Apply at the link below.**


**Information on maintenance service**

**Free-of-charge warranty service**

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BHT-M80/M70/M60/540/S30/1800/1700/1500/1400/1300

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**Apply at the link below.**


**Bluetooth® Communication unit**

**BA20-RU**

Target model:
A127Q-6B/SE1/SET-BUB/CFS1/Wearable SF1/UR31-MC01/G120B-5B-V2/G120Q-5B-V2

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**RS-232C set**

- Transmission unit
- RS-232C Cable (CBBA-RS2000/9)
- 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-U2000/4)

*1: The AC adaptor is not included. Please refer to section AC Adaptor when using the RS-232C interface cable.

*2: The built-in charger is not included. Please refer to section AC Adaptor when using the RS-232C interface cable.

*3: The AC adaptor is not included. Please refer to section AC Adaptor when using the RS-232C interface cable.

**[Download the USB driver from the DENSO WAVE direct web site.]**
The development support kit supports the development of applications for BHT terminals that run on Android.

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

Support only for Wireless LAN model.

Some functions are not supported.

Support only for BHT-1461QWB-CE-O.
Software

Development/kitting/operation tools

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.

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

**Details of SDK**
- OS: OS for running the SDK
- SDK: Library for developing the BHT applications (Java, Xamarin)
- Sample programs: Sample program for developing BHT applications (Java, Xamarin)
- Application
  - OCR application program pre-installed in the product
  - Tools
    - BHTOS monster (terminal setup tool for PCs)
    - Bluetooth master connection tool
    - SDK Setting connection manual
    - BHT terminal PC application manual

**Sample programs (examples)**
- For controlling the scanner
- For controlling devices (device information indication, system setup, camera control)
- For controlling Bluetooth (Bluetooth spp/master) operations
- For Sample programs for controlling wireless LAN (Java, Xamarin)
- BHTSDK (For API testing)
- For Kitting
- For OCR control

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

Regarding the supported OS, the system requirements are different depending on your development environment. Please refer to the official websites of the respective companies.

The above information is as of May 2022. Please refer to the following web site to confirm the latest information: [www.dens-wave.com](http://www.dens-wave.com)

**Development/kitting/operation tools**

**BHT Booster**

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 BHT applications (Java, Xamarin)".

**1. Ready for use straight from the box**

We 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 BHT terminal batch management system, master and results files can be sent and received even easier.

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

**Development/kitting/operation tools**

**BHTLink**

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.

**BHT OCR**

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.

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

**Supported BHT models**
- BHT-M80, M70, M60
### Terminal management/ maintenance tools

#### BHT DMS (Device Management System)

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

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

#### [Image of the main screen]

- **Function**
  - Setup
  - Collective management of terminal information
  - Automatic update of applications and OS
  - Transmission and receipt of master and result files
  - Automatic update of applications

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

#### Terminal management/ maintenance tools

##### Software

<table>
<thead>
<tr>
<th>Function</th>
<th>On-premises</th>
<th>Lite</th>
<th>Standard</th>
<th>The cloud</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registering device information</td>
<td>○</td>
<td>○</td>
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<td>○</td>
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<tr>
<td>Application, OS management</td>
<td>○</td>
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<tr>
<td>Group management</td>
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<tr>
<td>Communication</td>
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<tr>
<td>Security</td>
<td>-</td>
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<tr>
<td>System logging</td>
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<tr>
<td>Operational application image</td>
<td>-</td>
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<tr>
<td>Notification email</td>
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</tr>
<tr>
<td>Alert</td>
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</tr>
<tr>
<td>Remote control</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Multiple administrator use</td>
<td>-</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>USB LINE use</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* More than 1000 terminals must be managed with separate servers.

**Requirements:**
- Requires "BHT Remote" license.

**Server:**
- 2012
- 2012 R2
- 2016

**Supported BHT terminals**
- BHT-M80
- BHT-M70
- BHT-M60
- BHT-1800
- BHT-1700
- BHT-1600
- BHT-1460
- BHT-M80
- BHT-1800

---

### Terminal management/ maintenance tools

#### BHT Remote

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

- **Function**
  - 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 or in the event of an emergency.

2. **"Desk Top Mode"** for data entry and changing settings while undetected by the worker
   - In this mode, the manager can change the password and other data while the screen is on off the worker’s side, so it is suitable for updating programs and changing settings.

3. **"View Mode"** in 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.

#### Terminal management/ maintenance tools

##### BHT Security Package

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.

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

---

### Terminal management/ maintenance tools

#### BHT Security Package

Package for complete elimination of Android™ security risks

- **Function**
  - Terminal functionality restriction, information leakage prevention
  - 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-registered connections or apps.
  - 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.
Software

Development/kitting/operation tools

BHT-BASIC4.0 Development Pack

A software package required for the development of BHT applications

1. BHT-BASIC4.0 Compiler

Compile a source program to BHT execute form

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

2. BHT-BASIC4.0 Remote Debugger

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

- Single line step 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.

BHT-C Software Development Kit

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.

BHT Settings

Setting tool for making complicated introduction work easier

- Making configuration settings and installing applications required to introduce handy terminals becomes 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.

BHT-BASIC4.0 Transfer Utility

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.

BHT-BASIC4.0 Transfer Utility [EXE]

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.

BHT-BASIC4.0 Remote Debugger

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

- Single line step execution can be performed, and breakpoint 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-1300 (BHT-OS)
- BHT-1306QWB-H
- BHT-S40, S30, 1500, 1300 (BHT-OS)

Downloadable from QBdirect on our website free of charge
Software

Development/kitting/operation tools

BHT Term Emulator

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.

The BHT Term setup program enables applications of all BHTs operated through the LAN, reducing the burden on the system administrator.

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

Supported BHT models

- BHT-1300
- BHT-OS

Sample program examples

- For basic configuration settings (reading settings, barcode/reader setting, OS update settings, setting for connecting with Bluetooth devices)
- For basic programming
- For language display
- For key allocation setting (backlight, screen rotation and software input panel)
- For wireless LAN connection setting
- For CID communication setting
- For automatic reconciliation with Bluetooth devices

BHT Manager

Software for Operations 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:

Supported BHT models

- Wireless LAN models of BHT-540, 530, 1300 (BHT-OS)

Description of SDK

- OS
- ID for relevant SDK
- SDK
- Library and sample programs for developing BHT applications
- SDK_LIB
- Library for developing remote desktop applications
- Tools
- Remote display application for displaying BHT screen on the PC

Sample program examples

- Barcode and 2D code reading function
- RFID control (for products supporting RFID only)
- Wireless LAN communication function
- Communication control and API instruction collection (for products supporting SC only)
- Bluetooth SPP communication function
- CAN communication function (CLASSIB communication function only)
- Power OFF and reset
- Buzzer and vibrator control
- Camera control
- Key input control
- Compatible screen display function
- OS update function

Supported BHT models

- BHT1400, 1300 (Windows-OS)

Software development Kit

A complete set of SDK, OS, tools and samples is provided on DENS0 WAVE’s support page.

- SDK
- OS
- Tools
- Library for developing remote desktop applications
- Library for developing remote desktop applications

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

Supported BHT models

- BHT1400, 1300 (Windows-OS)

Remote desktop plug-in

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 reduces the process time-consuming.
- No information is left on the BHT side. This helps ensure security.

Supported BHT models

- BHT1400, 1300 (Windows-OS)
**Web browser plug-in**

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.
- Settings can be optimized for business operations by limiting some of the functions of Internet Explorer.

**Supported BHT models**

BHT1400, 1300 (Windows-OS)

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**Terminal management/ maintenance tools**

**Version Manager**

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.

**Main functions**

- Automatic updating of applications and OS
- Automatic updating of master files
- Automatic updating of files
- Automatic updating of BHT terminals

**Supported BHT models**

BHT1400, 1300 (Windows-OS)

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**RF Edge**

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.

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.

**Supported models**

RFID scanner: SP1 Android® terminal: BHT-1800

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**IC card model**

IC card device development support library for 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

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**Supported OS**

- Server 2012
- Server 2012 R2
- Server 2016
- 10340
- 10392

Use Minimum 5 license by 1 software. To operate reader/writer, additional license is respectively needed.

---

**Screen image**

- Recommended settings
  - Scanning environment setting complete with a simple query!
  - Also equipped with extensive range of menus capable of simulating actual use.
Software

OCR model

Application package for OCR introduction

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: Stabilization of scanning and scanning rate can be evaluated.
- Simplified evaluation application: Data can be collated with a configuration file and 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
  - Collation: Collation by flexible combinations of barcodes, 2D Codes, and text recognized with OCR is supported.
- Past record collection application (free of charge)
- Application which collects and stores the data collection rate and date of scanning as reference. The collected data can be used for evaluation applications.

QR Code solutions

DENSO WAVE cloud service

Q Platform®

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

Overview of the functions of Q Platform®

<table>
<thead>
<tr>
<th>Function</th>
<th>Overview</th>
<th>Q Mobile Library: smartphone application function module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scanning</td>
<td>QR Code, SQRC*, FrameQR® scanning function</td>
<td></td>
</tr>
<tr>
<td>Generation</td>
<td>QR Code, SQRC, FrameQR</td>
<td></td>
</tr>
<tr>
<td>Log storage</td>
<td>Generation and scanning, date, time, and number of requests for the above QR Code</td>
<td></td>
</tr>
</tbody>
</table>

*Requires connection to Q Platform

QR Code® solutions

Q Mobile Library: smartphone application function module

Q Platform

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®”.

Application for generating barcodes and 2D Codes

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

- QDRaw® Ad
  - For outputting images generated in BMP file format, GIF, JPEG format and other formats, which can be used with various graphic applications
  - 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
  - One license is granted per product for developers.
  - 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
  - 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 QRMaker®.

*Please note that unlike QRmaker®, the runtime library cannot be redistributed.

- One license is granted per server (per CPU). If a server has more than one CPU, 0.1 license is required per additional CPU.

- The SQRC generation function can be used by any systems and services connected to the Internet.

- Does not depend on the OS

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

- Does not require any settings for the cloud service. For details, please contact DENSO WAVE.

Supported OS

- Windows® 10 (32bit/64bit)
- Windows® 8.1 (32bit/64bit)
- Windows® 7 (32bit/64bit)
- Windows® Vista (32bit/64bit)
- Windows® XP SP3 (32bit/64bit)
- Windows® Server 2012 (32bit/64bit)
- Windows® Server 2008 R2 (32bit/64bit)
- Windows® Server 2008 SP2 (32bit/64bit)
- Windows® Server 2003 SP1 (32bit/64bit)
- Linux® (32bit/64bit)
- Mac® OS X (10.12-10.14)
- Mac® OS X (10.11-10.10)
- Mac® OS X (10.9-10.8)
- Mac® OS X (10.7-10.6)
- Mac® OS X (10.5)
**SQRC® solution**

**DENSO WAVE cloud service**

**SQRC®**

SQRC is a registered trademark of DENSO WAVE Inc.

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

## [Overview]
- **SQRC** looks like an 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.

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

1. **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.

2. **Admissions using the mobile ticket**
   - Ticket 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 face authentication SQRC

1. **Obtaining mobile ticket**
   - Purchase ticket online from mobile phone or PC.
   - Ticket is transmitted to mobile phone (or PC).

2. **Face picture or ID card with face photo is used to register facial image.**
   - When scanned by an ordinary QR Code, the SQRC displays the identity.

   - Face authentication SQRC
   - Facial feature quantity data encoded into SQRC, then transmitted to the smartphone with the data of the face photographed on the spot to confirm the identity.

#### Offline authentication with face and SQRC
- Matching face authentication SQRC transmitted to the smartphone with the data of the face photographed on the spot to confirm the identity.

### Example of use of SQRC on amusement park tickets

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1. **Obtaining mobile ticket**
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### Facial Authentication SQRC

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

#### Registration

**Encoding facial feature data into SQRC**

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

#### Acquisition

**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.

#### Usage

**Encoding facial feature data into SQRC**

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

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  - When scanned by an ordinary scanner, the SQRC displays related content (e.g., performer videos).

**Example of face authentication SQRC**

1. **Manufacturing facilities**
   - Application: Managing working hours of day laborers
   - Advantage: Eliminates errors in entry of working hours

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

3. **Concert halls**
   - Application: Admissions to concert halls
   - Advantage: Prevents unauthorized admission/ticket resale.
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.

**Robotics**

DENSO WAVE provides a wide range of collaborative robots that can be used in various industries and applications.

**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
2. Portable body
3. Easy to use
4. Open platform

**IoT Solutions**

*“QRN™” 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.

**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.

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.

**Basic knowledge**

### 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.

#### The kind and feature of 1D Code

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Symbol</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAN (JAN)</td>
<td><img src="image" alt="EAN Symbol" /></td>
<td>Suitable for high density printing, used for logistics as standard code.</td>
</tr>
<tr>
<td>Interleaved 2 of 5</td>
<td><img src="image" alt="Interleaved 2 of 5 Symbol" /></td>
<td>Suitable for bar-code readers with low reading speed.</td>
</tr>
<tr>
<td>Codabar (NW-7)</td>
<td><img src="image" alt="Codabar Symbol" /></td>
<td>Used for logistics, especially in the area of Defence in MIL standard.</td>
</tr>
<tr>
<td>CODE39</td>
<td><img src="image" alt="CODE39 Symbol" /></td>
<td>Used for electronic data processing and data storage.</td>
</tr>
<tr>
<td>CODE128</td>
<td><img src="image" alt="CODE128 Symbol" /></td>
<td>Used for code writing in logistics.</td>
</tr>
<tr>
<td>GS1 DataBar(RSS)</td>
<td><img src="image" alt="GS1 DataBar Symbol" /></td>
<td>Used for product identification.</td>
</tr>
</tbody>
</table>

---

**Example**

- **Barcode commodity code** (attached on all commodities)
- **Standard code in logistics**
- **Specialized for logistics**
- **Useful for logistics as standard code**
- **Suitable for high density printing**
- **Used for logistics as standard code**
- **Used for electronic data processing and data storage**
- **Used for code writing in logistics**
- **Used for product identification**

---

**Start / Stop character**

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

---

**Check digit**

Confirms that there are no errors in reading by means of one digit of compiled data. It is also called as symbol check character.

---

**Quiet 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.
Basic knowledge

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.

<table>
<thead>
<tr>
<th>2D Code (QR Code)</th>
<th>DataMatrix</th>
<th>MaxiCode</th>
<th>PDF417</th>
<th>Aztec</th>
</tr>
</thead>
<tbody>
<tr>
<td>![QR Code Icon](QR Code Icon)</td>
<td>![DataMatrix Icon](DataMatrix Icon)</td>
<td>![MaxiCode Icon](MaxiCode Icon)</td>
<td>![PDF417 Icon](PDF417 Icon)</td>
<td>![Aztec Icon](Aztec Icon)</td>
</tr>
</tbody>
</table>

Main features

- Large capacity, small printout size, High speed scan
- Large capacity, High speed scan

Main usages

- All categories
- FA
- Logistics
- DA
- Transportation

Developer/country

- DENSO WAVE (Japan)
- RVI Acuity (Australia)
- UPS (USA)
- Symbol Teche (USA)
- Welch Allyn (USA)

Data capacity

- Kanji: 1,817
- Alphanumeric: 4,296
- Numeric: 7,089
- Binary: 2,953

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.

The maximum data capacity of QR Code®

- Kanji: 1,817
- Alphanumeric: 4,296
- Numeric: 7,089
- Binary: 2,953

QR Code® Size (including the margin)

<table>
<thead>
<tr>
<th>Version</th>
<th>Number of cell</th>
<th>0.19 mm</th>
<th>0.25 mm</th>
<th>0.33 mm</th>
<th>0.42 mm</th>
<th>0.5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (21)</td>
<td>5.5</td>
<td>7.3</td>
<td>9.6</td>
<td>12.2</td>
<td>14.5</td>
<td></td>
</tr>
<tr>
<td>2 (25)</td>
<td>6.3</td>
<td>8.3</td>
<td>10.9</td>
<td>13.9</td>
<td>16.5</td>
<td></td>
</tr>
<tr>
<td>3 (29)</td>
<td>7.0</td>
<td>9.3</td>
<td>12.2</td>
<td>15.5</td>
<td>18.5</td>
<td></td>
</tr>
<tr>
<td>4 (33)</td>
<td>7.8</td>
<td>10.3</td>
<td>13.5</td>
<td>17.2</td>
<td>20.5</td>
<td></td>
</tr>
<tr>
<td>5 (37)</td>
<td>8.6</td>
<td>11.3</td>
<td>14.9</td>
<td>18.9</td>
<td>22.5</td>
<td></td>
</tr>
<tr>
<td>6 (41)</td>
<td>9.3</td>
<td>12.3</td>
<td>16.2</td>
<td>20.6</td>
<td>24.5</td>
<td></td>
</tr>
<tr>
<td>7 (45)</td>
<td>10.1</td>
<td>13.3</td>
<td>17.5</td>
<td>22.3</td>
<td>26.5</td>
<td></td>
</tr>
<tr>
<td>8 (49)</td>
<td>10.8</td>
<td>14.3</td>
<td>18.8</td>
<td>23.9</td>
<td>28.5</td>
<td></td>
</tr>
<tr>
<td>9 (53)</td>
<td>11.6</td>
<td>15.3</td>
<td>20.1</td>
<td>25.6</td>
<td>30.5</td>
<td></td>
</tr>
<tr>
<td>10 (57)</td>
<td>12.4</td>
<td>16.3</td>
<td>21.5</td>
<td>27.3</td>
<td>32.5</td>
<td></td>
</tr>
<tr>
<td>11 (61)</td>
<td>13.1</td>
<td>17.3</td>
<td>22.8</td>
<td>29.0</td>
<td>34.5</td>
<td></td>
</tr>
<tr>
<td>12 (65)</td>
<td>13.9</td>
<td>18.3</td>
<td>24.1</td>
<td>30.7</td>
<td>38.5</td>
<td></td>
</tr>
</tbody>
</table>

● Require margin of 6 cell around QR Code.
Basic knowledge

What is FrameQR®?

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.

Example of FrameQR® applications

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

2. Advertisements
   - Advantage: FrameQR helps 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.

Features of FrameQR-K Addresses FrameQR’s drawbacks.

QR Code for app downloads

Read

FrameQR-K

Website access

Read

Code can’t be read by ordinary QR readers.

App supporting FrameQR-K

Read

Website access

Access to dedicated website for app downloads
Basic knowledge

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 non-contact 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 simultaneously 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 inventory check work 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 shortening waiting time 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 wireless 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, medical and educational 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 immediately.

IEEE802.11a/b/g/n: ①「FH」②「DS/OF」③「W」④「DS-SS」Pulse-code mode intends DS-SS mode or OFDM mode.

IEEE802.11a/n: ①「FH」②「W」③「OFDM」Pulse-code mode intends OFDM mode.

IEEE802.11g: ①「FH」②「DS」Pulse-code mode intends DS-SS mode.

IEEE802.11a: ①「FH」②「DS」Pulse-code mode intends DS-SS mode.

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IEEE802.11g: ①「FH」②「DS」Pulse-code mode intends DS-SS mode.

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 not required) (stations mentioned above will be referred to as “other stations” below), as well as in commercial, industrial, medical and educational devices such as microwave ovens.

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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)

1987
Launched handy terminal (world’s first)

1994
Announced QR Code®

2014
Launched High-output RFID handy scanner (Japan’s first)

2017
Launched handy terminal equipped with Android™

2020
Lineup of four BHT-M Series (Android) and BHT-S Series (BHT-OS) handy terminal models to realize a new work style.

QR Code® is a registered trademark of DENSO WAVE INCORPORATED.
Each region has different availability of sales product. For more information, please contact our sales agencies.