DENSO

UHF band RF tag high-power hand-held scanner

NEW **SP1**

DENSO
DENSO WAVE

Maximize your RFID scanning speed

World-Leading *1	World-Leading *1
RF tag scanning speed*2	RF tag read distance*2
Max. 700 tags/sec	Approx. 8 m

Easy connection to smart device. Supports Android™/iOS (MFi certified).

Faster, Easier, More Convenient

World-Leading [1]
RF tag scanning speed [2] Max. **700** tags/sec

High-speed scanner cuts stock-taking man-hours dramatically

An innovative proprietary antenna automatically switches. The maximum scanning speed is a remarkable 700 tags per second. The high-speed scanner improves work efficiency significantly and cuts the man-hours required for stocktaking and other tasks.
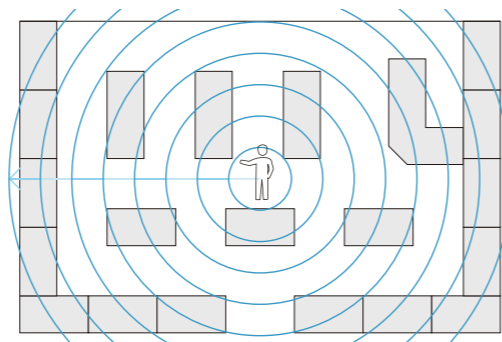
World-Leading [1]
RF tag read distance [2] Approx. **8** m

Long read range for easy stocktaking in large areas

Since the scanner can read RF tags within approx. 200 sq meters surrounding the worker, there is no need to walk around in the store to take stock. The long-distance scan range lets workers take inventory of displays located at high places in the store or items placed on high shelves without climbing onto a ladder.

8m x 360°
= 200 m²

Reduce Stock-Taking Time

Easy Pairing

Quick and easy pairing via Bluetooth®

Connecting is as easy as scanning the QR Code® on the SP1 main unit. Pairing is quickly completed via Bluetooth® for smooth startup and completion of work process.

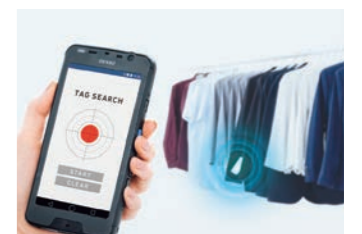＊The pairing app can be downloaded free from our website (bundled with SDK).

Convenient Functions

Improve work speed and efficiency

Product search

Search function allows easy searching for specific tags.

Individual scanning

Simply adjust output to scan the tag at hand or rewrite data.

＊1: Based on our September 2018 survey results. ＊2: Function settings may be subject to restrictions in some countries. Scanning speeds and read distances are reference values. Actual scanning speeds and read distances will depend on the environment. The maximum read range depends on the tag to be scanned. Evaluation condition = Avery Dennison AD-229r6.

Work Without Interruptions

Automatic data backup and reconnection

Even if the pairing is disconnected due to an obstacle or interference with other radio waves, the internal memory retains the data in processing. (Stores data for up to 80,000 RFID tags.*) The SP1 can automatically search for a previously paired device and transmit the data in processing after reconnecting to the device. This eliminates problems arising from pairing disconnection.

＊When storing 96-bit EPC data

Simultaneous smart device charging cradle with USB port

The cradle incorporates a USB port for charging a smart device and can be used simultaneously while the SP1 is charging, eliminating the need to provide/store a separate charger.

Attachments for mounting various smart devices

Optional attachments are available for mounting the BHT-1800 and various smartphone models. These devices allow secure mounting of a device on the SP1 for one-handed operation.

For BHT-1800
EA-SP1-A1800

Universal attachment
EA-SP1-AS
(Quad Lock® is available)

＊Sold separately

Work Comfortably

Easy-to-hold grip for comfortable operation

The ergonomically designed grip fits comfortably in hand for ease of use by both men and women.

Easy connection to smart device supports Android™/iOS (MFi certified)

The product supports Android™ and iOS (officially certified as "Made for iPhone/iPad/iPod" under the Apple MFi Licensing program). A business smartphone or tablet can be used for easy introduction of the RFID system into your workflow.

Standard and high-capacity batteries available to suit your needs

The standard battery is slim and lightweight. The high-capacity battery ensures uninterrupted operation during long hours of work. Select the one that meets your specific needs.
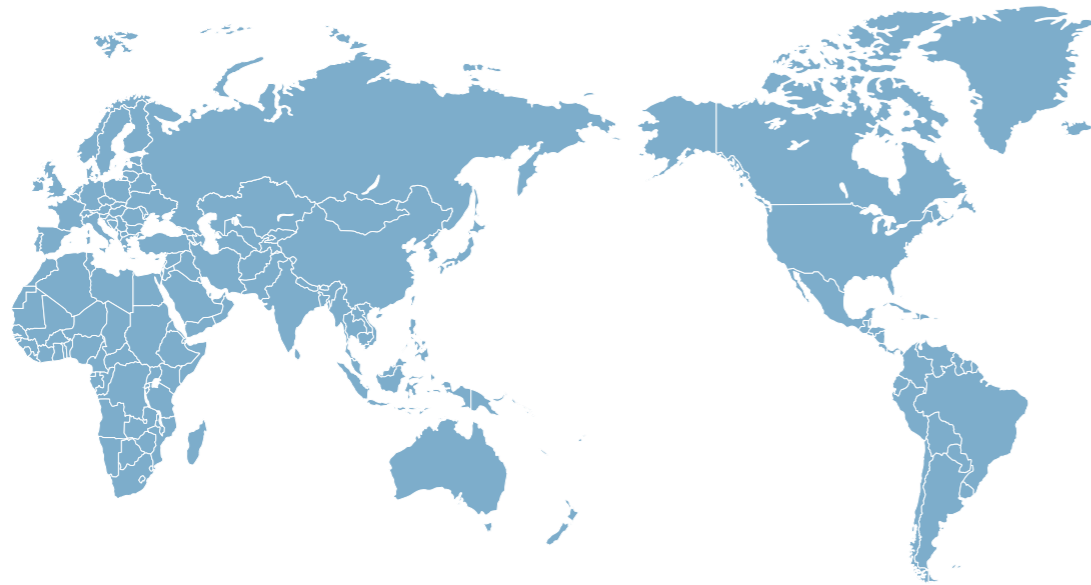
Durable construction to withstand rigorous use and falls from heights of 1.5 m

The product withstands impacts from falls from 1.5 m. The robust construction ensures reliability even if the terminal is bumped against a shelf or wall or accidentally dropped.

Resistant to water and dust IP54 protection

The product meets IP54 protection class standards and can be used in locations where they may be exposed to rain or dust—for example, product receiving sites partially exposed to the elements.

Bringing Japan's rapid stock-taking workflows to the rest of the World

Available in more than 40 countries around the world
Same high-quality support as in Japan

DENSO WAVE's RFID products (excluding certain products) are available in more than 40 countries around the world. In addition to our products, we offer comprehensive support and fast response for repair needs. DENSO WAVE ensures worry-free product deployment around the world.

"Made in Japan" reliability and produced in-house to ensure the highest quality

Our products are manufactured in the company-owned plant located in Agui Town, Aichi Prefecture . Products are assembled by experienced workers and tested and evaluated under testing conditions harsher than actual operating conditions in order to deliver high reliability and high quality.
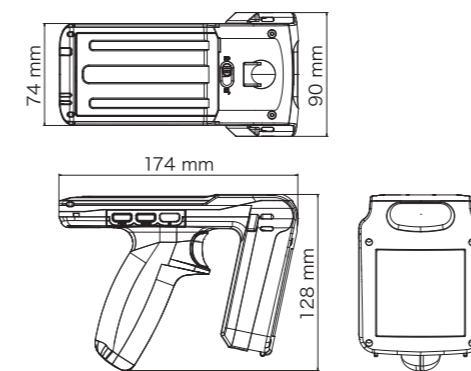

Left：Head Office building, Right：DENSO WAVE's electronics plant

Specifications

			SP1-QUBi
		Model	SP1-QUBi
Scanning unit	RFID functions	Supported RF tags	ISO/IEC 18000-63 Type C (EPCglobal Class 1 Gen 2) compatible tags
		Frequency	916.8 to 920.8 MHz
		Channel interval/Number of channels	200 kHz/6ch
		Transmission output	Up to 1 W
		Modulation	PR-ASK
		Scanning speed*1	Max. 700 tags/sec
		Scanning distance*1	Approx. 8 m
		Output adjustment	10 dBm to 30 dBm
	Scanner functions	Type	Area sensor
		Readable codes — 2D codes	QR Code, Micro QR Code, SQRC*2, PDF417, Micro PDF417, Maxi Code, DataMatrix (ECC200), GS1 DataBar Composite (EAN. UCC Composite)
		Readable codes — 1D codes	EAN-13/-8 (JAN-13/-8), UPC-A/-E, UPC/EAN (with add-on), Interleaved 2 of 5, CODABAR (NW-7), CODE39, CODE93, CODE128, GS1-128 (EAN-128), GS1 DataBar (RSS)
		Minimum resolution — 2D codes	0.167 mm
		Minimum resolution — 1D codes	0.125 mm
		PCS value	0.3 or greater
		Elevation/tilt angle	±50°
		Scan confirmation	Blue/red 2-color LED, buzzer
Transmitter unit	Bluetooth®		Bluetooth Ver. 2.1 + EDR Standard Class 2
	Profile		SPP, SPP (iOS)
	Cradle		USB
Power supply	Main battery		Lithium-ion battery
	Operating time*3	Standard battery	Approx. 4 hours
		High-capacity battery	Approx. 8 hours
Internal memory			80,000 RFID tags
Environmental performance	Operating temperature*4		-20 °C to + 40 °C
	Protection class		IP54
	Drop-resistant strength*5		30 drops from 1.2 m onto concrete (5 times on each of 6 faces), 1.5 m
EMC standard			VCCI ClassA
Weight			Approx. 400 g (with standard battery)；approx. 450 g (with high-capacity battery)

＊1: Function settings may be subject to restrictions in some countries. Scanning speeds and read distances are reference values. Actual scanning speeds and read distances will depend on the environment. The maximum read range depends on the tag to be scanned. Evaluation condition = Avery Dennison AD-229r6. ＊2: Support scheduled for implementation with version update. ＊3: These operating times are reference values measured under room temperature and other conditions set by our company. Actual operating times depend on working conditions. Conditions set by our company: Power Save Mode 2, RF Tag Continuous Read Mode 1, LOW buzzer level. ＊4: The temperature rises from 0 to 40℃ during charging. When the product is used at ambient temperatures of -10℃ or below, turn on the product and operate briefly at normal room temperature before taking the product to the worksite; do not turn off. Due to battery characteristics, operations may be subject to certain limitations, such as significantly decreased operating time, under low temperature conditions (0℃ or lower). If ambient temperatures are very low, check for normal function before using the product. ＊5: This is a test value obtained under room temperature conditions. It is not a guaranteed value.

Dimensions

74 mm / 90 mm / 174 mm / 128 mm

Main unit set contents
● Main unit　● Hand strap　● Operating guide

Software <Development / kitting / operating tools>
● Google Android™ Studio
● Microsoft Visual Studio 2017
● Android™ OS application development support kit (SDK)＊
● iOS application development support kit (SDK)＊
＊Can be downloaded free from Denso Wave website (Qbdirect).
Prepare the following development tools for iOS:
● Xcode 9.2 or later　● macOS X　● iOS 10.0 or later

Product configuration
[Main unit set] SP1-QUBi
[Communication unit] CU-SP1A (USB)

[Battery]
BT-SP1LA-C
(Standard lithium-ion battery + battery cover)
BT-SP1L-C
(High-capacity lithium-ion battery + battery cover)

Recommended model

Android™ 7.1.2 smart terminal
BHT-1800

For more information, refer to the SP1 product page.

Optional items

Model		Communication unit CU-SP1A	4-unit battery charger*1 CH-1804	4-unit main unit charger*2 CH-SP1L4	SP1 direct cable CBSP-US2000/4	BHT1800 charging cable*3 CBBHTUS500/C18-4A
Communication unit		USB 2.1 Full Speed compatible	—	—	USB 2.1 Full Speed compatible	—
Charging unit	Charging time — Main unit charging	Standard battery: 3.5 hours High-capacity battery: 7 hours	—	Standard battery: 3.5 hours High-capacity battery: 7 hours	Depends on the connected supply current.	Depends on the connected supply current.
	Charging time — Battery cartridge	Standard battery: 4 hours High-capacity battery: 8 hours	Standard battery: 4 hours High-capacity battery: 8 hours	—	—	—
Dimensions		158×110×85 mm	TBD	141×464×90 mm	2 m	50 cm
Power supply		AC adapter	AC adapter	AC adapter	Supply from connected device	Supply from connected device

Attachments	For BHT1800	Universal attachment (Quad Lock® is available)	Other	Shoulder strap*4
	EA-SP1-A1800	EA-SP1-AS		SBSP1

＊1: This option is scheduled for shared use by standard battery and high-capacity battery. ＊2: This option lacks the smart device charging function. ＊3: This cable is for charging the BHT-1800. It cannot be used for USB communication. ＊4: The attachment cannot be mounted or dismounted when the shoulder strap is attached to the SP1.