

Master Specification	
Handy Terminal	
Product name	H-1311-BTH
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Revision History

Specification No.: SS08xxx
Product Name: H-1311-BTH

Revision	Date	Section	Description of Changes
Initial	T.B.D	-	-

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1. Abstract

This document provides specifications for the H-1311-BTH, a handy terminal with built-in laser scanner (hereinafter “the handy terminal”).

2. Overview

- The H-1311-BTH is a barcode handy terminal which contains a compact laser scanner.
- Collected data by each key operation, various setting data and add location data such as clock information can be stored in a built-in memory.
- The dedicate optical communication unit is able to send the stored data to devices such as host computer through IrDA
- AA alkaline batteries and the dedicated lithium-ion battery are useable for main power supply.

2.1. Model Name, Type

Model Name: H-1311-BTH (Body: light grey, laser emitting angle: 60°)

2.2. Features

- Light weight and compact design
- Large-capacity memory (RAM: 16MB) can hold vast amount of master data and collected data.
- IrDA FiR(max.4Mbps) provides high-speed update and download.
- The used Bluetooth is compliant with ver.1.2 and SPP profile is installed.
- Easy use with one hand
- Shock resistant up to 1.5 m with enhanced dust- and drip-proofing that satisfies IP54 requirements.
- This product is compliant with RoHS.
(However, this document does **not** have any legal weight in the European Union)

3. Basic Specifications

Items	Specifications		Remarks	
CPU	32bits RISC CPU			
Memory	FROM	4Mbyte	For OS/AP	
	RAM	16Mbyte(user area: 14Mbyte)	For: <ul style="list-style-type: none"> • Work area for OS/AP • User's data 	
OS	μITRON			
Display section	Display element	FSTN semi-transmissive LCD		
	Font size	12/16/24 dot Font		
	Structure of Characters	When in 12 dot Font mode (digit × row) Reduced-size ANK: 21×21 Half-size character: 21×10 Kanji character: 10×10		
		When in 16 dot Font mode (digit × row) Reduced-size ANK: 16×16 Half-size character: 16×8 Kanji character: 8×8		
		When in 24dot Font mode (digit × row) Reduced-size ANK: 10×10 Half-size character: 10×5 Kanji character: 5×5		
	Number of dots	(W)128× (L)128 dots		
	Size of dots	(W)0.24mm ×(L)0.24mm		
	Pitch angle of Dots	(W)0.02mm ×(L)0.02mm		
	Type of characters	JIS Standard No.1 and 2, ANK		
	Back light	White LED		
	Contrast adjustment	Possible		
Operating section	Key type (Operation keys)	22keys : 10keys, Trigger, BS, Shift, CLR, ENT, PW, Q1, Q2, Function×3		
Indication LED	One dual color LED(red×green)			
Vibration	Vibrating motor		*Vibration time may vary.	
Buzzer	Adjustable volume/tone			
Bluetooth	Specification	Compliant with ver.1.2	HCI module, produced by Kyocera	
	Installed profile	SPP	Stack, produced by iAnywhere	
	Frequency	2402MHz to 2480 MHz		
	Output level	Class 2		
	Communication range	10m	It may be shorter than 10m depending on the use environment.	
	Baud rate	115.2kbps		

	Antenna	1/4λ (surface mounted)			
Infrared communication	Compliant with IrDA 1.2 *Speed (SiR): 9600~115.2k(BPS) (FiR): 4Mbps			Note: These are theoretical figures and were not actually measured.	
RTC(clock)	Available	YY/MM/DD/HH/MM/SS (Accurate Within 90 Seconds per Month)			
Power Supply Section	Main Battery	Lithium-ion Battery (3.7V 1100mAh) AA alkaline battery×2			
	Backup Battery	Coin-type lithium-ion secondary battery (18mAh)		For RAM / RTC back up	
	Up-time (*1)	Lithium-ion Battery: rs AA alkaline battery: hrs		Bar Code Scanning: Twice in 10 seconds (Electrical cooperation mode B)	
	Data holding time (*2)	7days or longer		Back up for RAM / clock	
Scanner section	Light-emitting element	Red-visible light semiconductor laser			
	Laser wave length / output	650±10nm, lower than 1mW, 25°C			
	Scanning frequency	100±20scan/sec			
	Minimum resolution	0.127mm			
	Scanning distance	55 to 520mm		Resolution:1.0mm PCS: 0.9	
	Symbologies	JAN, EAN, UPC-A, UPC-E, NW-7(Codabar), Industrial 2of5, Interleaved 2of5, Code 11, Code 39, Code 93, Code 128, MSI/Plessey, UK/Plessey, IATA, Telepen, Matrix 2of5, S Code, Tri-Optic, Chinese Post Matrix 2of5, EAN 128, RSS-14, RSS Limited, RSS Expanded, PDF417, MicroPDF417		*Please refer to the section 8 for further information.	
Developmental environment	C language			Application development environment	
Environmental condition	Temperature	Operation	-10°C to 50°C		
		Storage	-20°C to 60°C		
	Humidity	Operation	20%RH to 85%RH		No condensation, no frost
		Storage	20%RH to 85%RH		No condensation, no frost
	Charging temperature		0 to 40°C		
	Drop test (*3)	Frequency	3 cycles (6 sides considered as one cycle)		
		Height	150cm		
		Floor	Concrete		
Water and drip proof		Compliant with JIS IP-54			
Dimensions	159.0 × 52.8 × 30.5mm				
Weight	Approximately 180g (including AA alkaline battery)				
Accessory	Hand strap×1				
	AA alkaline battery×2				
	Users manual×1				

***1 Operation time**

- When main battery is new and fully charged at room temperature.

***2 Data holding time**

- Time for holding RAM and clock data when main battery is **not** supplied and backup battery is new and fully charged.

***3 Shock resistance**

- Conditions of the shock resistance test are:

- Does not count scratches or whitening on a surface as a malfunction.
- Shock resistance is approved when no malfunction occurs after the test.
- Shock resistance is approved if the battery cover is not unhooked after the test

4. Detailed View

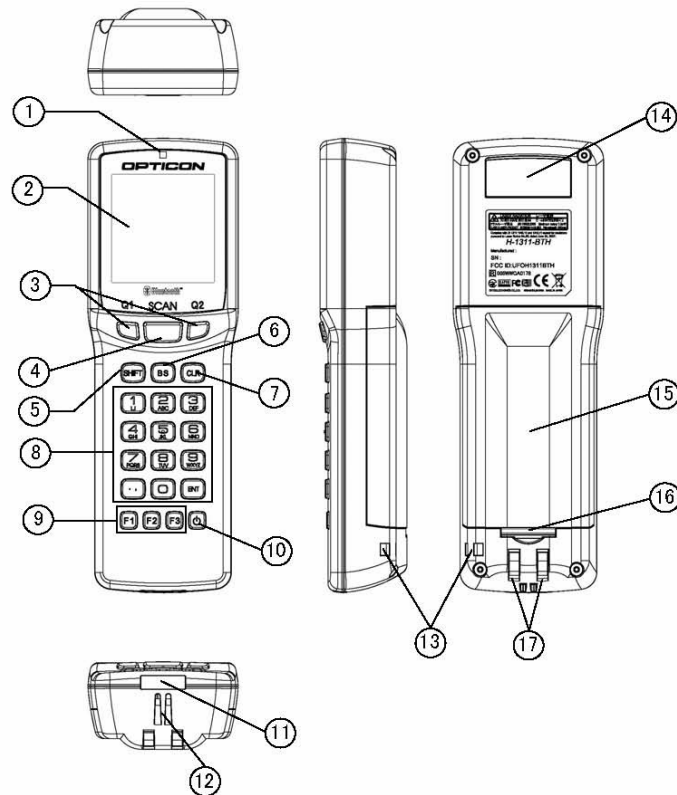


Figure 1: Detailed view

No.	Items	Specifications
1	LED	Indicates operational status such as scanning and communication. It is able to be controlled by user's programs.
2	LCD	Indicates scanned barcodes and operational items
3	Up / Down keys	Used when selecting items from a menu. Can be programmed by users to set certain functions.
4	Trigger key	Press when scanning barcodes
5	SHIFT	Used to switch between numerical and letter entry modes
6	BS	Deletes the previous character
7	CLR	Cancels input
8	Operational keys(10)	Used for numerical, "ENTER", decimal point input.
9	F1, F2, F3	Keys that can be programmed by users
10	Power key	Used to put the product ON/OFF
11	IrDA	For infrared communication
12	Speaker	
13	Hand strap hole	Hole for attaching a hand strap
14	Scanning window	Laser that reads barcodes is emitted from this opening.
15	Battery cover	Remove when replacing the rechargeable battery
16	Battery cover lock	Used to lock / open the battery cover
17	Electrical contacts	Used to charge the terminal's battery, when the terminal is placed in the dedicated cradle.

5. Optical Specifications

5.1. Laser Scanning Specifications

Item		Characteristics	Unit
Light-emitting Element		Red laser diode	
Emission Wavelength		650 ± 10 (25°C)	nm
Light Output		< 1.0	mW
Scanning Method		Bi-directional scanning method	
Scanning Speed		100±20	Scan/Sec
Scan angle	Scan angle	54±5	°
	Read angle	44(min)	°

5.2. Laser Scanning Standard

5.2.1. Laser Scanning Tilt

Vertical differences between both ends of a laser scan line

*Up to 1.2° in vertical direction from the scan origin (MM mirror).

*Up to 3.1 mm at 150 mm from the scan origin.

5.2.2. Scanning Curvature

The maximum differences between the laser scan line and the line between both ends of the laser scan line.

*Up to 1.27 degrees in vertical direction from the scan origin (mm mirror).

*Up to 3.3 mm at 150 mm from the scan origin.

Measure it in the middle of the laser scan line.

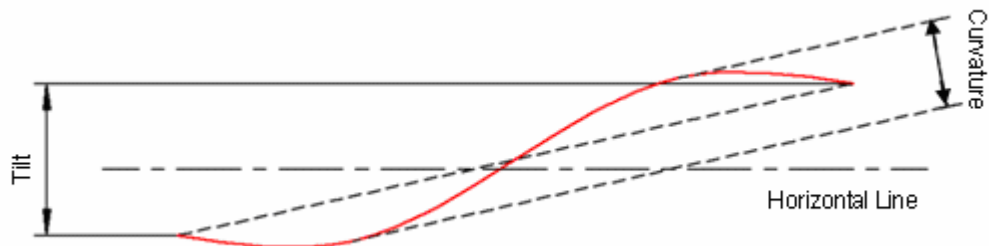


Figure2: Scanning curvature

6. Technical Specifications

6.1. Depth of Field

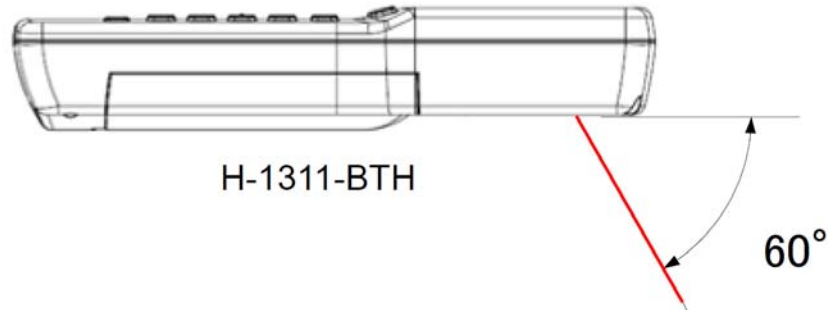


Figure3: PCS

Except as otherwise noted in each section, technical specification conditions are as follows:

Conditions:

Ambient temperature and humidity	: room temperature, room humidity
Ambient immunity	: 500 to 900 lx
Background of barcode	: black
Decoding test	: Approve the performance when decoding is successful in all ten tests. (Decoding is deemed successful when completed in 0.5 seconds or less.)

6.2. Print Contrast Signal

0.45 or higher (over 70% of reflectivity of space and quiet zone).

$$PCS = \frac{\text{Reflectance of white bar} - \text{Reflectance of black bar}}{\text{Reflectance of white bar}}$$

Scanning performance may decline if dirt or scratches mar the optical window. Keep the optical window clean.

6.3. Scan Area and Resolution

The depth of field is measured from the edge of the scanner. The scanning range is within the circular arc centered on the scan origin.

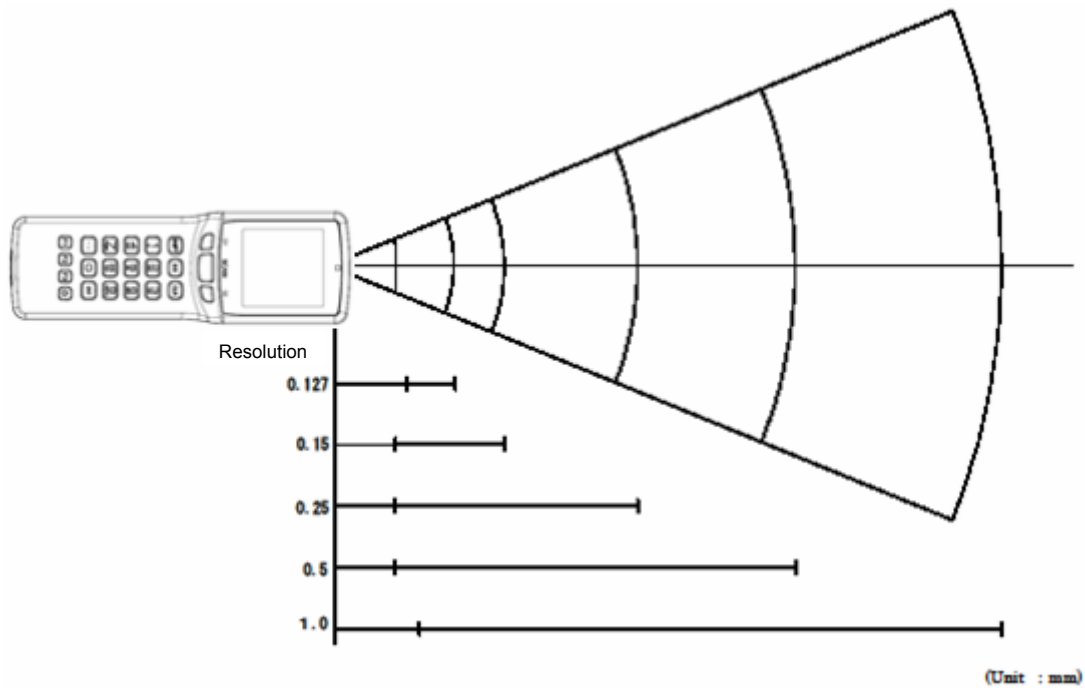
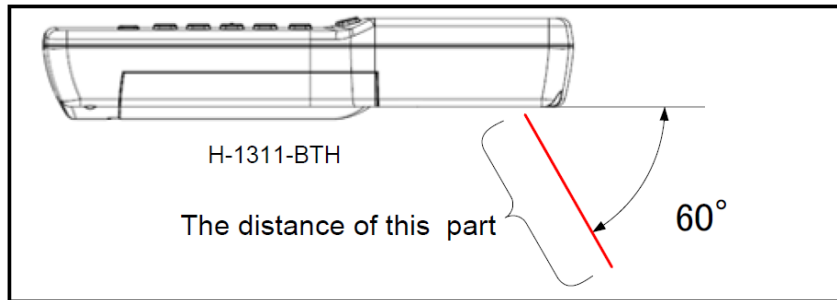


Figure4: Scan field

Resolution	Depth of Field	Symbology	PCS	Quiet Zone	Digit
1.0mm	55 to 520	Code 39	0.9	25mm	1
0.5mm	35 to 350	Code 39	0.9	18mm	3
0.25mm	35 to 200	Code 39	0.9	10mm	8
0.15mm	35 to 100	Code 39	0.9	7mm	10
0.127mm	45 to 80	Code 39	0.9	5mm	4

Conditions:

Barcode	OPTOELECTRONICS Test Sample, NW ratio = 1:2.5
Angle	Pitch: $\alpha = 0^\circ$ Skew: $\beta = +15^\circ$ Tilt: $\gamma = 0^\circ$
Curvature	$R = \infty$

6.4. Pitch, Skew and Tilt

Items	Specifications
Pitch	$\alpha = \pm 35^\circ$
Skew	$\beta = \pm 50^\circ$ (excluding dead zone)
Dead Zone(DZ)	$\beta = \pm 8^\circ$ (there are some areas in which decoding fails due to specular reflection)
Tilt	$\gamma = \pm 20^\circ$

Conditions:

Barcode	OPTOELECTRONICS Test Sample	
	Pitch Skew Dead zone	PCS = 0.9 Resolution = 0.25mm 9-digit Code 39 Quiet zone = 10mm NW ratio 1:2.5
	Tilt	PCS = 0.9 Resolution = 0.26mm 13-digit JAN Quiet zone = 10mm
Distance	90mm from the edge of the data collector	
Angle	Pitch	Skew: $\beta = +15^\circ$ Tilt: $\gamma = 0^\circ$
	Tilt	Pitch: $\alpha = 0^\circ$ Skew: $\beta = +15^\circ$
	Skew Dead zone	Pitch: $\alpha = 0^\circ$ Tilt: $\gamma = 0^\circ$
Curvature	R = ∞	

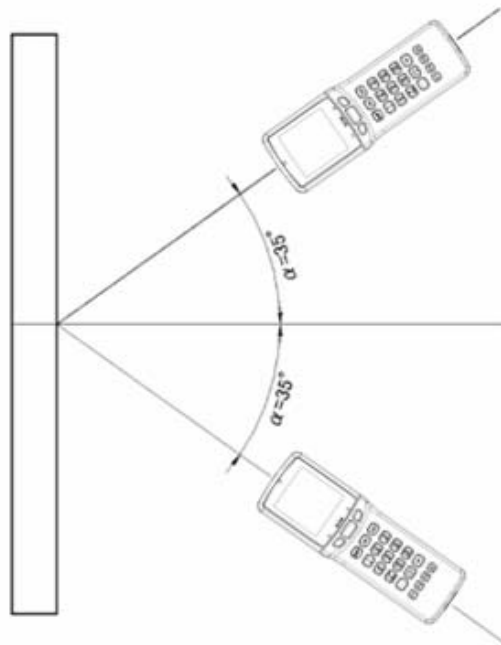


Figure5: Pitch angle

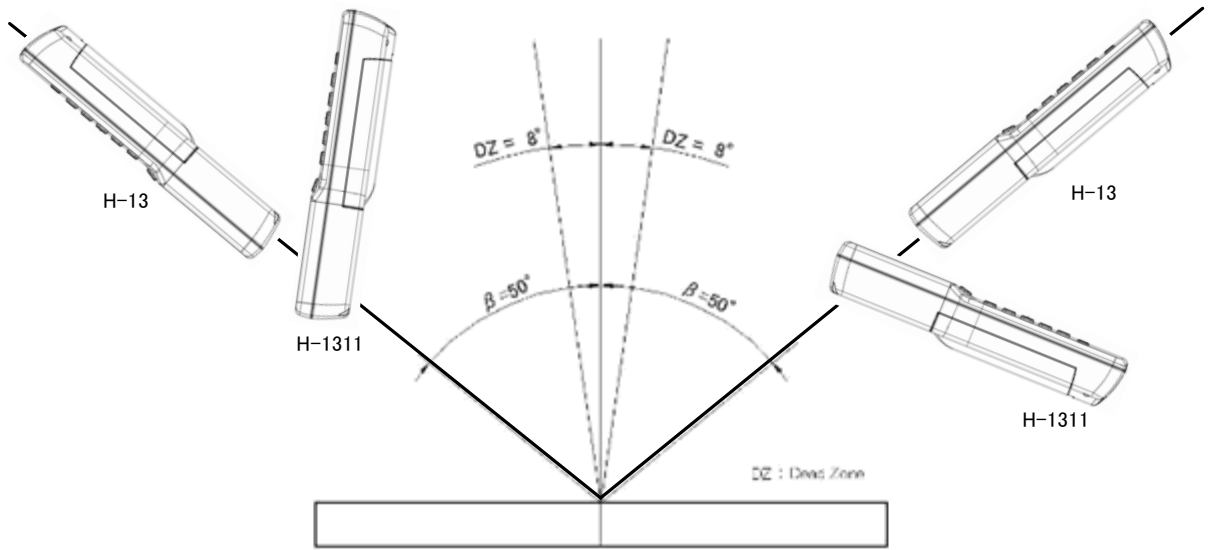


Figure6: Skew angle

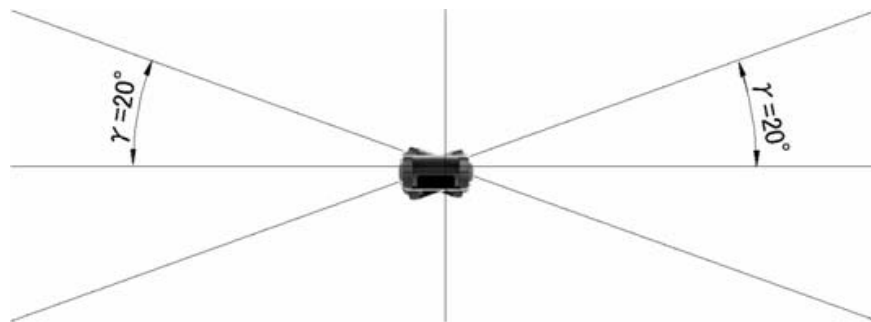


Figure7: Tilt angle

6.5. Curvature

Items	Specifications
8-digit JAN	decoding performance is guaranteed when $R \geq 15$ mm.
13-digit JAN	decoding performance is guaranteed when $R \geq 20$ mm.

Conditions:

Barcode	OPTOELECTRONICS Test Sample PCS = 0.9 Resolution = 0.26mm Quiet zone = 10mm
Distance	90mm from the edge of the data collector
Angle	Skew $\beta = +15^\circ$

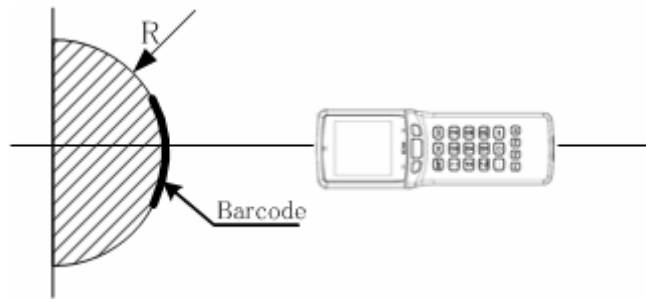


Figure8: Curvature

6.6. Ambient Light Immunity

Incandescent light	4000 lx
Fluorescent light	4000 lx (except high frequency fluorescent light)
Sunlight	80000 lx

Items	Conditions
Barcode	OPTOELECTRONICS Test Sample PCS = 0.9 Resolution = 0.25mm 9-digit Code 39 Quiet zone = 10mm NW ratio 1:2.5
Distance	130mm from the edge of the data collector
Angle	$\alpha = 0^\circ \beta = 15^\circ \gamma = 0^\circ$
Curvature	$R = \infty$
Measurement location	Specular reflection should be avoided.

7. Application Development Environment

This chapter will explain the optional development environment to develop business-orientated applications.

The language for the development is C language.

<Contents of the development>

- Application development guide
- Application development environment
- System menu specification manual
- Library specification manual
- Compiler(*)

*Produced by IAR

Part name: Embedded Workbench (abbr.: EWARM)

7.1. System Menu

This is the system menu for user application download and the settings for the handy terminal.
To start the system menu, hold down the "Q1" and "Q2" keys when turn the power ON. (*1)

Main menu	Sub menu	Function
Restart		Closes the system menu
Download		Used for the application download. When it is completed successfully, application is started.
Upload		Used for the application download.
Terminal settings	Contrast setting	Adjusts the contrast of LCD
	Date setting	Sets the system date
	Click tone setting	Sets click tone
	Terminal ID setting	Used for the terminal ID setting and confirmation
	Resume setting	Sets enable / disable resume
	Auto-power down setting	Sets the duration for auto-power down
	Back light setting	Sets to put on/off the back light of display
	Battery power indication	Indicates the battery power status
	Cradle protocol setting	Sets availability of protocol when communicating with the cradle
	Initialization setting	Initializes all settings to the factory mode
Terminal test	Display	Tests the display
	Key	Tests the keyboard
	Memory	Memory check
	Buzzer	Tests the buzzer tone
	LED	Tests the LED
	Back light	Tests the back light
	Vibrator	Tests the vibrator
	RTC	Tests the system date
	Battery	Checks the voltage of main/sub batteries
	Scanner	Tests the scanner
	Bluetooth	Tests if data transmission/reception is successfully done.
File list	Disk A:	Indicates the file lists in the RAM disk.
Version info.		Indicates version information of OS, BOOT, etc.

*1 When user application is not available, system menu is activated by power ON.

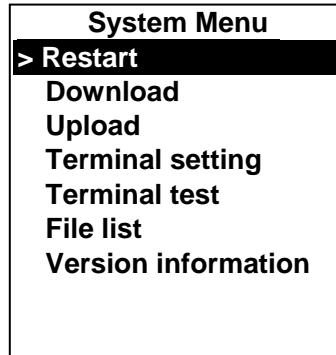
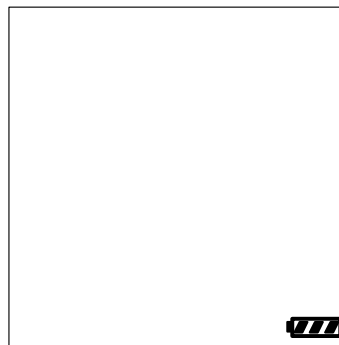


Figure 9: System menu display

*Please refer to the library specification manual for your further information.

7.2. Battery power indication

The power of battery will be indicated the bottom right of the display as shown in the figure below.



Battery power is indicated with either of the steps shown below.

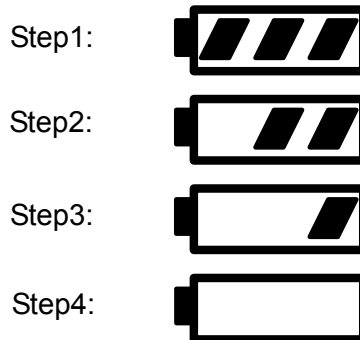


Figure 10: Battery power indication

*Whether the battery power indication is set or not, the “Step 4” mark will appear on the display when the battery power has ran out. In that case, please replace a new battery immediately.

8. Symbology

For various business use, symbologies can be set by each application.
Symbologies shown below are available for scanning.

Symbologies	Symbologies
13-digits JAN	Interleaved 2of5
13-digit JAN + 2-digit ADDON	Code 93
13-digit JAN + 5-digit ADDON	Code 128
8-digit JAN	MSI/Plessey
8-digit JAN + 2-digit ADDON	IATA
8-digit JAN + 5-digit ADDON	UK/Plessey
13-digit EAN	Telepen
13-digit EAN + 2-digit ADDON	Matrix2of5
13-digit EAN + 5-digit ADDON	ChinesePostMatrix 2of5
8-digit EAN	NW-7 ABC Code
8-digit EAN + 2-digit ADDON	NW-7 CX Code
8-digit EAN + 5-digit ADDON	S-Code
13-digit Instore Code	Tri/Optic
8-digit Instore Code	Code 39 Full Ascii
UPC-A	Code 39 It.Pharmaceutical
UPC-A + 2-digit ADDON	EAN 128
UPC-A + 5-digit ADDON	RSS-14
UPC-E	RSS Limited
UPC-E + 2-digit ADDON	RSS Expanded
UPC-E + 5-digit ADDON	PDF417
UPC-E1	MicroPDF417
UPC-E1 + 2-digit ADDON	Code 11
UPC-E1 + 5-digit ADDON	Korean Post
Code 39	
NW-7(Codabar)	
Industrial 2of5	

*Please refer to the library specification manual for your further information.

9. Bluetooth Specifications

Bluetooth is used as an interface for the H-1311-BTH.
It is compliant with ver1.2 and has SPP (Serial Port Profile).

9.1. Profile Installed

- SPP (Serial Port Profile)

9.2. Supported Communication Type

1 to 1 (One data collector to one host system)

9.3. Operation Mode (When connected)

Master mode

9.4. Security Mode

Available (authentication)

9.5. Encryption

Available

10. Serial Label



Figure 11: Serial label for H-1311-BTH

11. Packaging Specifications

11.1. Individual Packaging Specifications

T.B.D

11.2. Collective Packaging Specifications

T.B.D

12. Environmental Specifications

12.1. Operation Temperature and Humidity

-10°C to 50°C (except when charging)
20 to 85% RH (No condensation, no frost)

12.2 Storage Temperature and Humidity

-20°C to 60°C
20 to 85% RH (No condensation, no frost)

12.3. Ambient Light Immunity

Decoding performance is guaranteed when the range of illumination on a barcode surface is between zero and the following values:

Incandescent light	4000 lx
Fluorescent light	4000 lx (except high frequency fluorescent light)
Sunlight	80000 lx

12.4. Dust and Drip Proof

IEC: IP54

12.5. Vibration Strength

No malfunction occurred after the following vibration test.

Vibration test: Increase the frequency of the vibration from 10 Hz to 100 Hz with accelerated velocity 19.6 m/s^2 (2.0G) for 60 minutes in non-operating state. Repeat this routine in each X, Y, Z direction once for 60 minutes each.

12.6. Vibration Strength (with individual packaging)

No malfunction occurred after the following vibration test.

Vibration test: Increase the frequency of the vibration from 10 Hz to 100 Hz with accelerated velocity 19.6 m/s^2 (2.0 G) for 60 minutes in individually packaged state. Repeat this routine in each X, Y, Z direction once for 60 minutes each.

12.7. Drop Test

No malfunction occurred after the following test.

Drop Test: Drop the scanner from 150cm above the concrete floor.

(6 sides, 3 times each)

12.8. Drop Test (with individual packaging)

No malfunction occurred after the following test.

Drop Test: Drop an individually packaged scanner from a height of 150 cm onto a concrete floor once on its 1 corner, 3 edges and 6 sides. (10 drop tests in total.)

12.9. Electrical Characteristics

- Withstand Voltage: AC 1500 V/ per 60 seconds, 10mA or less
 - Insulation Resistance: DC 500 V, 2 MΩ or higher
 - Current Leakage: 250 μA or less / AC 250 V 60 Hz
 - Static Electricity Noise Immunity:
 - No destruction found: ± 15kV (air or direct discharge)
 - No malfunction found: ± 10kV (air or direct discharge),
± 6kV (contact, direct or indirect discharge)
- Note: Testing method complies with IEC-61000-4-2. (150pF/330Ω)

13. Reliability

MTBF 10,000 hours

14. Repair and Maintenance

14.1. Warranty Period

Optoelectronics Co., Ltd. (hereinafter referred to as "Optoelectronics") warrants that this product is free of defects or malfunctions for a period of twelve (12) months from the end of the month it is shipped. In the case where defects or malfunctions of this product occur during foregoing warranty period, Optoelectronics provides repairs free of charge. Any repair or replacement of this product after the foregoing warranty period will be billable. If defects or malfunctions were caused by mishandlings of customers, the repair or replacement of this product will be billable even during the foregoing warranty period.

14.2. Delivery

Maintenance and repair after the shipment of the product shall be done using send-back system (transport costs paid by the sender).

14.3. Time Frame of Repairing Products

Repaired product will be shipped back to the customer within 20 days after its acceptance by Optoelectronics. However, the time needed for the repair of products with early failures need to be separately discussed with Optoelectronics. Also, if quicker repair is needed, it must be discussed with Optoelectronics in advance.

14.4. Maintenance Period

The maintenance period of this product is 5 years after its shipment. However, if deemed difficult to continue the maintenance of the product before the end of the foregoing maintenance period, products for its replacement or means of its maintenance shall be discussed separately.

14.5. Others

Any problems other than those described above shall be discussed separately.

15. Regulatory Compliance

15.1. Laser Safety

- JIS C 6802:2005 Class 2
- IEC60825-1+A2:2001 Class 2
- CDRH Class 2

15.2. Product Safety

- IEC60950-1
- EN60950-1

15.3. EMC

- EN55024
- VCCI Class B

This is a Class B product, to be used in a domestic environment, based on the Technical Requirement of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference.

- FCC Part15 SubpartB Class B

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

. FCC Radiation Exposure Statement

This device complies with Part 15 of FCC RF Rules. Operation is subject to the following two conditions: 1) this device may not cause interference and 2) this device must accept any interference, including interference that may cause undesired operation of the device. Please avoid direct contact to the transmitting antenna during transmitting.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

•FCC Part15 SubpartC

Federal Communications Commission Notices

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Harmful Interference Notice

This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

Changes or modifications to this equipment that have not been approved by Ruckus Wireless may void the user's authority to operate this equipment.

15.4. R&TTE

- EN300 328
- EN301 489-1
- EN301 489-17

15.5. Others

- Certification for Construction Design of Specified Radio Equipment
- Bluetooth logo certification

16. RoHS

RoHS: The restriction of the use of certain hazardous substances in electrical and electronic equipment, 2002/95/EC.

17. Precautions

17.1. Precautions about the laser light



Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

- Do not stare into the laser light from a scanning window. It may harm your eyes.
- Do not point the laser directly at others' eyes. It may harm your eyes.
- Do not stare into the beam with optical instruments. It may harm your eyes.

17.2. Radio Low

The data collector has obtained the Certification for Construction Design of Specified Radio Equipment.

Therefore it does not need to have a radio station license in Japan.

The following activities are prohibited under the Radio Law:

- Remodeling and disassembly
- Peeling off the certificate label

Do NOT use the data collector under the following environment:

*Otherwise radio interference may affect other device and end up with causing physical or material damage.

- Safety apparatus and medical device for human body protection
- Environment where is concerned to cause serious damage

17.3. Handling

Do not deliberately cause this product any stress listed below

(1) Shock:

- Do not drop from the non-standard height

(2) Heat:

- Use outside specification temperature range.
- Do not pour boiling water on the data collector.
- Do not throw data collector into the fire.

(3) Foreign material:

- Do not put into water.
- Do not put into chemicals.

(4) Data Communication

IrDA communication may not be done under an strong inverter fluorescent. Please be aware of the operational environment.

(5) Others:

- Do not plug/unplug the connectors before disconnecting the power.
- Do not disassemble this product
- Do not use this product near a radio or a TV receiver, it may cause reception disorder.
- Do not use of this product in the environment with excessive static electricity, it may cause product malfunction.
- Scanning performance of this product under an inverter fluorescent lamp or CRT light is not guaranteed.

17.4. Export Administration Regulations

This product is subject to the strategically controlled exports regulated under “Foreign Exchange and Foreign Trade Laws”. Therefore, export of this product may require an export permission of Japanese government.

17.5. Radio Communication

- To start IrDA communication through the H-1311-BTH, the device used as a receiver is required followings;
 - to be compliant with the same version as H-1311-BTH
 - to have the same profile as H-1311-BTH
- The connection with a recipient without preliminary test is not guaranteed.
- Since the communication uses the 2.4 GHz, it may be interrupted by various devices using the same frequency bands.
- This product (with national specification) should only be used in Japan. The use of the product outside Japan may be fined.
- Baud rate and communication distance vary depending on obstructions between the devices, radio wave condition, and the receiver.

17.6. Frequency Band

The frequency band 2.4 GHz is utilized by this scanner. Read carefully the followings before using this product.

In the frequency band of this scanner, scientific, medical and industrial devices including microwaves are used. Also other radio stations including local private radio station for mobile object identification requiring license for such as manufacturing lines at factories, specific power-saving radio station requiring no license and amateur radio station are managed.

Please make sure that “other radio stations” are not managed in the frequency band 2.4 GHz before using this scanner.

In case that radio interference occurs between this scanner and “other radio stations,” change the service space immediately, or stop transmitting radiowave to avoid the interference.

If you have any questions or troubles, please contact our marketing group.

Appendix. Mechanical Drawings

H-1311-BTH

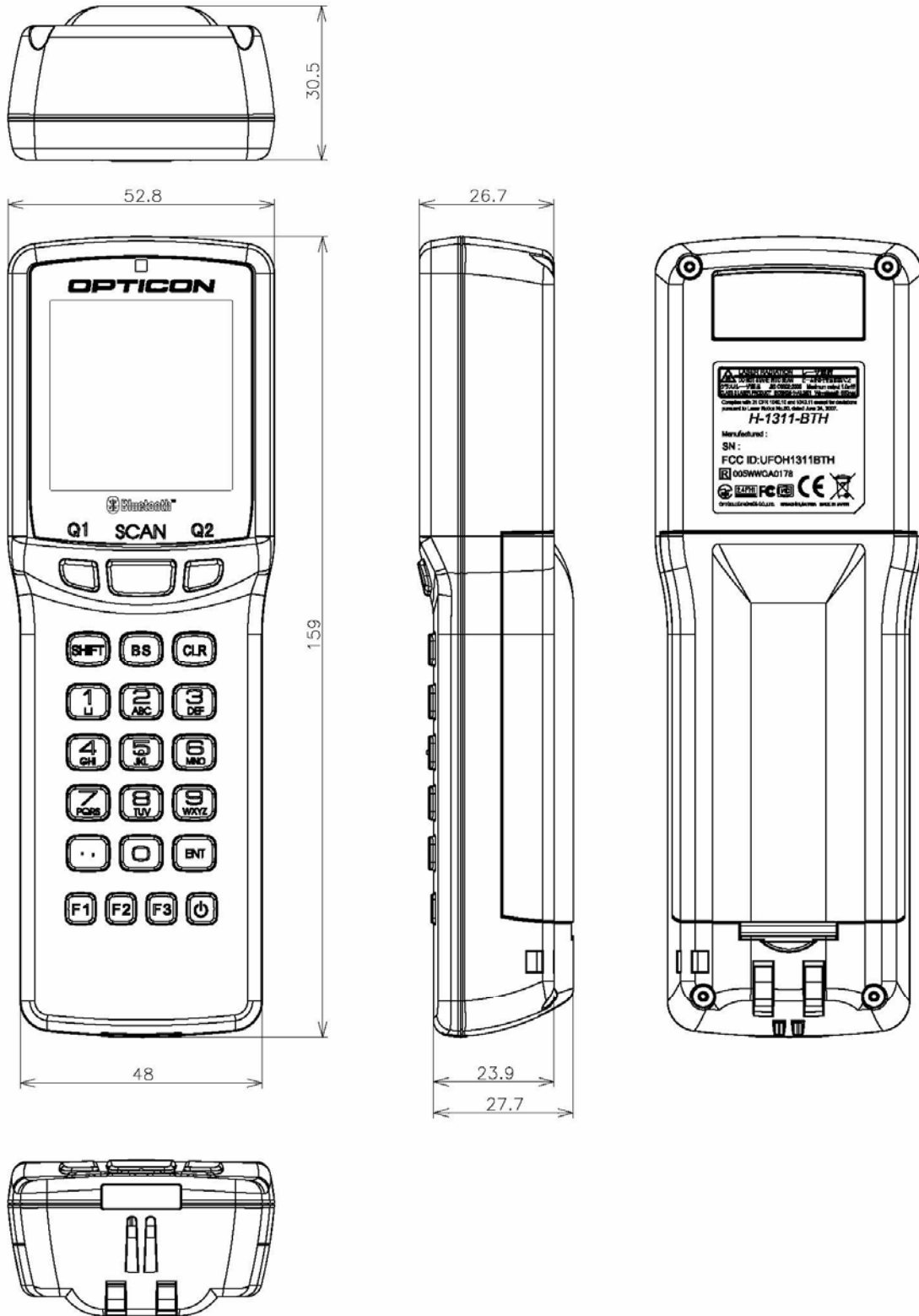


Figure 14: Mechanical drawing of H-1311-BTH