

Master Specifications	
Handy Laser Scanner	
Product Name	OPR-3301
Specification No.	SS08xxx
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Revision History

Specification Number: SS08xxx

Product Name: OPR-3301

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

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1. Overview

This manual provides specifications for the wireless handy laser scanner, OPR-3301.

2. Abstract

The use of a short-wavelength red laser beam enhances the visibility of scanning lines.

- Efficient reading performance using laser light

The use of a short-wavelength red laser beam enhances the reading performance.

With a high level -visibility of scanning lines and its gun-type grip, it is easier to target the objective barcodes and it release operators from the physical load.

- Wireless Communication via Bluetooth Interface

Bluetooth wireless communication raises efficiency of work with the Bluetooth wireless communication which supports 10meters distance and it is compliant with Class 2.

- Dedicated cradle

OPR-3301 can be charged by replacing the unit on the dedicated cradle.

It takes about 5hours to fully charge the unit.

- Wide variety of Supported Symbologies

EAN / JAN / UPC / Industrial 2of5 / IATA/Interleaved 2of5 / NW-7(Codabar) / Code 39 / Code 93 / Code 128 / MSI/Plessey / ISBN / GS1 DataBar / MicroPDF417 and so on.

Please refer to the section 10 for further information.

- RoHS

OPR-3301 is compliant with RoHS.

(However, it is assessed by Optoelectronics Co., Ltd. and the assession does not have any legal weight in the EU.)

3. Basic Specifications

Item		Specifiaction		Remark	
Control Section	MPU	32 bit ST Micro STR710FZx		Clock:48MHz	
	FROM	1Mbits			
	SRAM	1Mbits			
Wireless communication section	Frequency	2402MHz to 2480MHz			
	Specification	Bluetooth Ver1.2 Compliant		Supported profile: SPP, HID	
	Transmission output	Class 2(4dBm or less)			
	Communication range	10m		The communication distance may vary.	
	Baud rate	115.2kbps			
	Antenna	1/4λ (Surface mounted type)			
Optical Section	Reading method	1.0mW or less		100±20scan/sec	
	Light emitting element	Red laser diode		Wave length: 650±10nm (25°C)	
	Light output	≤ 1.0mW		Laser Class 2 product	
Technical specifications	Symbology	EAN / JAN / UPC / Industrial 2of5 / IATA/Interleaved 2of5 / NW-7(Codabar) / Code 39 / Code 93 / Code 128 / MSI/Plessey / ISBN / GS1 DataBar / MicroPDF417		Please refer to the section 10 for further information.	
	Minimum resolution	0.127mm		Code 39 (PCS 0.9)	
	Curvature	R≥15 mm (8-digit JAN) R≥20 mm (13-digit JAN)		PCS 0.9	
	Scan angles	Pitch: α≤±35°		PCS 0.9	
		Skew: β≤±50°(Excluding dead zone)			
		Tilt: γ≤±20°			
	Depth of Field (mm)	Code 39	Resolution (1.0)	40 to 500m m	PCS 0.9
			Resolution (0.5)	20 to 350m m	
			Resolution (0.25)	20 to 200mm	
			Resolution (0.127)	30 to 70mm	
Minimum PCS	0.45 or higher		Over 70% of reflectivity of space and quiet zone		
Power supply section	Main battery	Specification	Lithium-ion secondary battery Nominal capacity: 1000mAh Nominal voltage: 3.7V	When discharging at 0.2CA	
		Charging time	- About 5hours (with using the dedicated AC adapter) - About 10hours (with using the dedicated USB Bun power supply)		
	Consumption current (at 3.7 V)	Peak	220 mA		When scanning and decoding
		Average	165 mA		When scanning and decoding
		Idle	30 mA (typ)		When idle without connection to communication line
	Battery life	When idle	About 48hours		*When the battery is fully charged and operation is 1scan/5sec.
		In use	About 15hours		

Item		Specifiacion	Remark
Environmental Specifications	Temperature	Operation	-5 to 50°C
		Storage	-20 to 60°C
	Humidity	Operation	5 to 95 % (No condensation, no frost)
		Storage	5 to 95 % (No condensation, no frost)
	Ambient light immunity	Incandescent light	3,000 lx or less
		Sun light	50,000 lx or less
	Dust and drip proof		IP42 compliant
Vibration		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 G) for 60 minutes in non-operating state. Repeat this routine in each X, Y, Z direction once for 60 minutes each.	
Shock		No malfunction occurred after the following drop test. Drop Test: Drop the scanner from a height of 120 cm onto a concrete floor (three times in each of 6 angles).	
Regulatory compliance	Laser safety		JIS C 6802:2005 class 2 IEC 60825-1+A2:2001 Class 2
	EMI		VCCI Class B/EN55022 CLASS B/FCC Part15,C
	Product safety		IEC/EN 60950-1
	Immunity		EN61000-6-1 Class-B
	Others		CE Marking Certification for Construction Design of Specified Radio Equipment
	Logo certification		Bluetooth logo certification
Immunity Test (*)	Static electricity	No malfunction	15 kV (Impressed static electricity of 15kVfor 50 times on the surface of the scanner)
		No destruction	Contact Discharge (direct / indirect): ± 6 kV Air Discharge (direct): ± 8 kV
	Amplitude Modulation	Frequency	80 to 1000 MHz
		Level	3 V/m
		AM	80 % (AM)
	Radio Frequency Common Mode	Frequency	0.15 to 80 MHz
		Level	3 V
		AM	80 % (AM)
	Power supply frequency magnetic field	Frequency	50, 60 Hz
		Dip 1	3 A/m
			30 % drop, 0.5cycles
Physical features			About 56(W) × 113(D) × 132(H) (Unit: mm)
			About 110g

*Includes when using OPR-3301 with a communication cradle, CRD-3301.

4. Detailed View

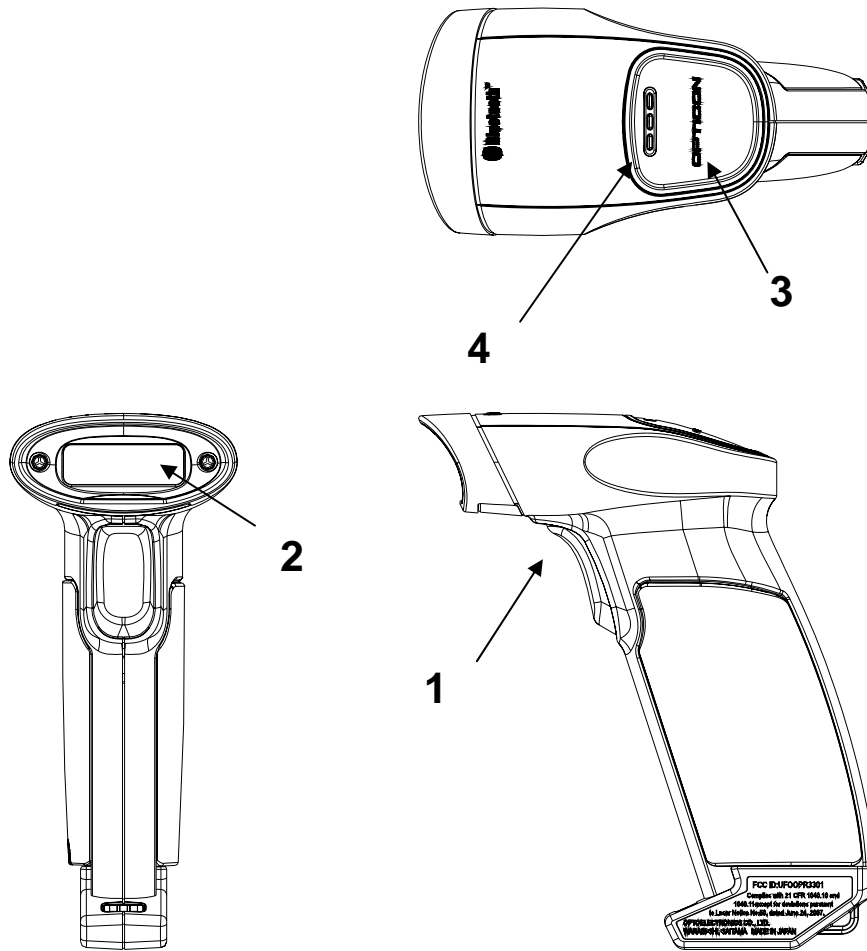


Figure 1: Detailed view

No.	Name	Function
1	Trigger switch	To capture and decode a barcode image, you need to press the trigger switch.
2	Light receiving lens	The scanner captures a barcode image through a light receiving lens. Make sure the lens is clean before scanning.
3	Status LED	The status LED lights up green when the scanner registers a successful read.
4	Buzzer holes	The buzzer sounds through these holes. The buzzer cannot be heard when those holes are covered. The buzzer sounds upon the completion of scanning. Buzzer settings can be configured in various ways. You can enable or disable the buzzer as well as change the buzzer loudness or duration.

4.1. Status LED and Buzzer

OPR-3301 notifies its operation state with LED and buzzer on its head section.

Status	LED	Indication	Details of the status	Buzzer
While charging	Red	Lighting	Shows that the scanner is being charged after setting it on the cradle.	---
	Green	Lighting	Shows the completion of charging.	
Barcode scanning	Blue	Blinking	Shows that scanning of the barcode or transmission of scanned has been done successfully.	Trrr
	Red		Shows that the scanned data was not successfully transmitted.	Pip
	Green		Shows that scanned data is being stored in memory.	Pip
Connecting Bluetooth	Blue	Continuously blinking	Shows that the scanner is making connection to Bluetooth.	---
		Lighting	Shows that Bluetooth connection was made successfully.	Pip, peep
	Red	Lighting	Shows that Bluetooth connection was not made successfully.	Pip, Pip, Pip
Disconnecting Bluetooth	Red	Lighting	Shows that Bluetooth was disconnected.	Trrr
			Shows that the Bluetooth device is out of range and the connection was disconnected.	
Low battery power	Red	Continuously blinking	Shows that the battery is running out. Please charge it immediately.	---

5. Electrical Specifications

5.1. Configuration

OPR-3301 consists of following sections:

- Decode section

It decodes signals from laser module section which transmits scanned data via analogue output. Bluetooth communication section which controls system is also included in this section.

- Interface section

Power supply section and charging control and user interface is included.

Power is supplied from a batter pack or CRD-3301.

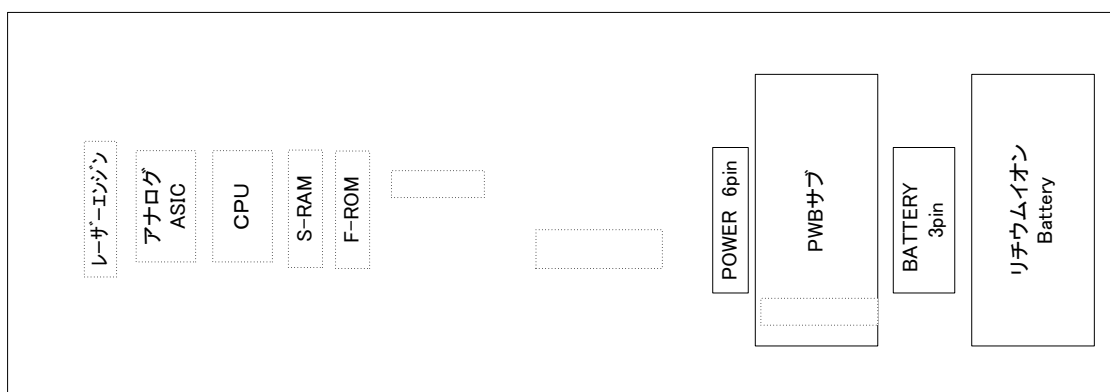


Figure 2: Electrical specifications

5.2. Consumption Current

Parameter	Specification	Remark
Idle 1	30 mA(typ)	Bluetooth is disconnected.
Idle 2	35 mA(typ)	Bluetooth is connected.
Operation current (Ave.)	165 mA	When scanning, communicating and LED lights.
Maximum current (Peak)	220 mA	Peak value of operation current.
Measurement condition / others	・Power supply voltage 3.7V / 25°C ・Operation current was measured while test mode.	

5.3. Charging Current

Status	Specification	Remark
Charging with CRD-3301	600 mA or less	When connected to RSS232C (using a AC adapter).
	300 mA or less	When connected to USB. Bus power class: Hi-PO WER (500 mA)。 Nom500 mA.
Measurement condition / others	<ul style="list-style-type: none"> •Measured at 25°C. •Temperature should be between 0 to 40°C when charging scanner. (Charging may be stopped when the temperature is over 40°C due to the thermo protection.) •As a protection for when there is a malfunction of power supply, charging will be stopped when the voltage impressed to the charging terminals is over the range between 3 to 6V. 	

5.4. Operation Time and Charging Time

Status	Specification	Remark
Battery up time	Idle 1	About 55 hours - When Bluetooth is disconnected all the time.
	Idle 2	About 48 hours - When Bluetooth is connected all the time.
	When scanning	About 15 hours - When scanning once in every 5 seconds. - When Bluetooth is disconnected all the time.
Charging time	Charging time 1	About 5 hours - When the scanner is connected to CRD-3301 via RS232C.
	Charging time 2	About 10 hours - When the scanner is connected to CRD-3301 via USB (power supplied from n).

*OPR-3301 may not satisfy the foregoing performance due to battery degradation.

6. Optical Specifications

6.1. Laser Scan Specifications

Parameter		Specification	Unit
Light-emitting element		Red laser diode	-
Emission wavelength		650±10 nm (25°C)	nm
Light output		1.0 mW or less (Class 1)	mw
Scanning method		Bi-directional scanning	-
Scanning speed		100±20	scans/s
Scan angle	Scan angle	54±5	°
	Read angle range	44 (Min)	°

6.2. Curvature of Scan

Maximum gap between the straight line connecting both ends of the laser scan line and the actual laser scan line: Less than 1.27° curvature from the scan origin.

Maximum of 3.3 mm curvature when measured at a point 150 mm away from the scan origin. (The skew angle of this measurement was zero degrees.)

Measurement was done from the center of scan line.

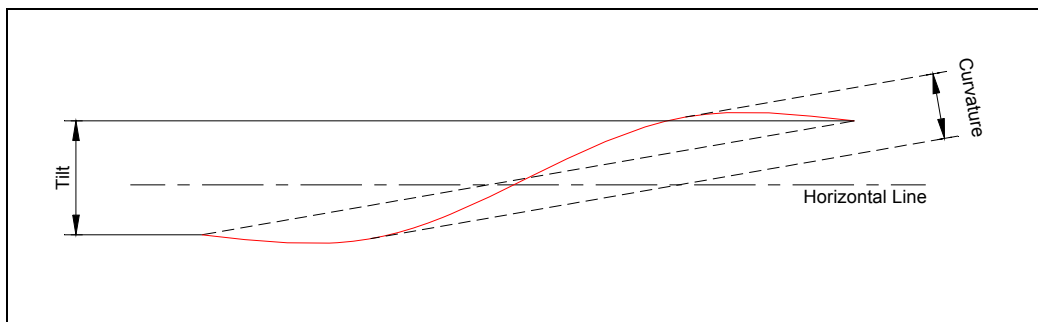


Figure 3: Laser scan tilt and curvature

7. Technical Specifications

The conditions for technical specifications are as follows, unless otherwise specified in each section.

<Conditions>

Ambient temperature and humidity: Room temperature (5 to 35° C)

Room humidity (45% to 85% RH)

Ambient light: 500 to 900 lx

Background of barcode: Barcode = black

Power supply voltage: 5.0 V

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.)

7.1. Laser Scan Specifications

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.

7.2. Scan Area and Resolution

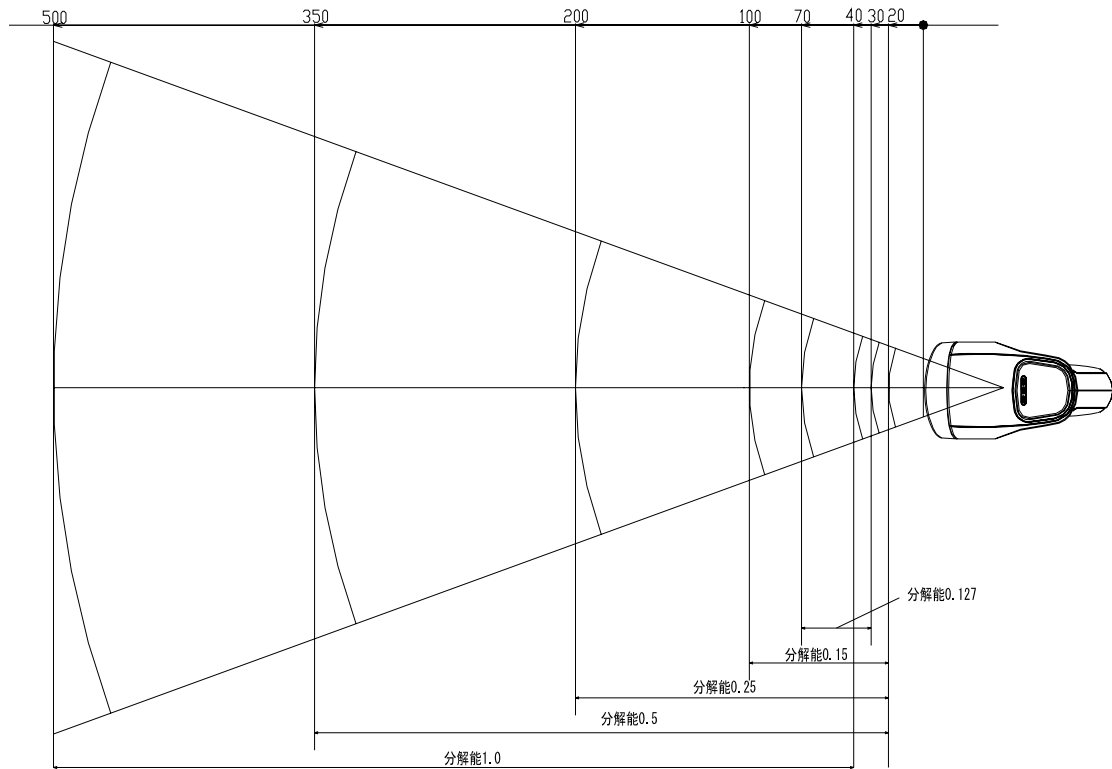


Figure 4: Depth of Field

Resolution	Symbology	PCS	Quiet zone	Digits	Decode depth [mm]
1.0mm	Code 39	0.9	25 mm	1	40 to 500
0.5mm	Code 39	0.9	18 mm	3	20 to 350
0.25mm	Code 39	0.9	10 mm	8	20 to 200
0.15mm	Code 39	0.9	7 mm	10	20 to 100
0.127mm	Code 39	0.9	5 mm	4	30 to 70

<Conditions>

Barcode Sample: OPTOELECTRONICS Test Sample
 Angle: Pitch angle: $\alpha = 0^\circ$ Skew angle: $\beta = 15^\circ$ Tilt angle: $\gamma = 0^\circ$
 Curvature: $R = \infty$

7.3. Curvature

7.3.1. Pitch Angle

$$\alpha \leq \pm 35^\circ$$

7.3.2. Skew Angle

$$\beta \leq \pm 50^\circ \text{ (Excluding dead zone)}$$

7.3.3. Dead Zone

$$\beta \leq \pm 8^\circ \text{ (There are some areas in which decoding fails due to specular reflection)}$$

7.3.4. Tilt Angle

$$\gamma \leq \pm 20^\circ$$

<Condition>

Barcode:

Pitch, Skew angle, Dead zone

PCS = 0.9, Resolution = 0.25 mm, Symbology = 9-digit Code 39, Quiet Zone = 10 mm,
N/W Ratio = 1:2.5

Tilt Angle

PCS = 0.9, Resolution = 0.26 mm, Symbology = 13-digit JAN, Quiet Zone = 10 mm

Distance: 60mm from the focal plane of the scanner

Angle:

Pitch angle

Skew angle: $\beta = +15^\circ$, Tilt angle: $\gamma = 0^\circ$

Tilt angle

Pitch angle: $\alpha = 0^\circ$, Skew angle: $\beta = +15^\circ$

Skew angle and Dead zone

Pitch angle: $\alpha = 0^\circ$, Tilt angle: $\gamma = 0^\circ$

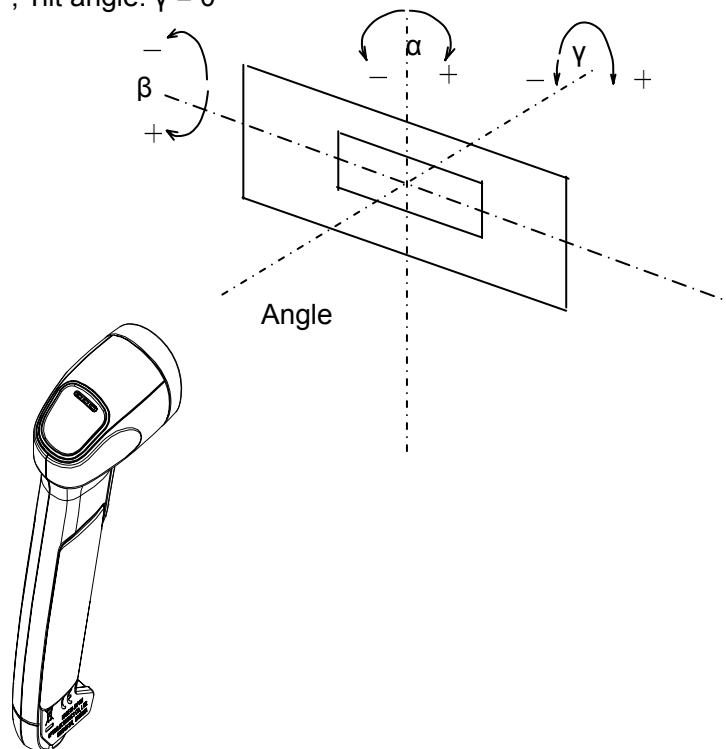


Figure 5: Pitch, skew and tilt

7.4. Curvature

With 8-digit JAN/UPC/EAN barcodes, decoding performance is guaranteed when $R \geq 15$ mm.
 With 13-digit JAN/UPC/EAN barcodes, decoding performance is guaranteed when $R \geq 20$ mm.

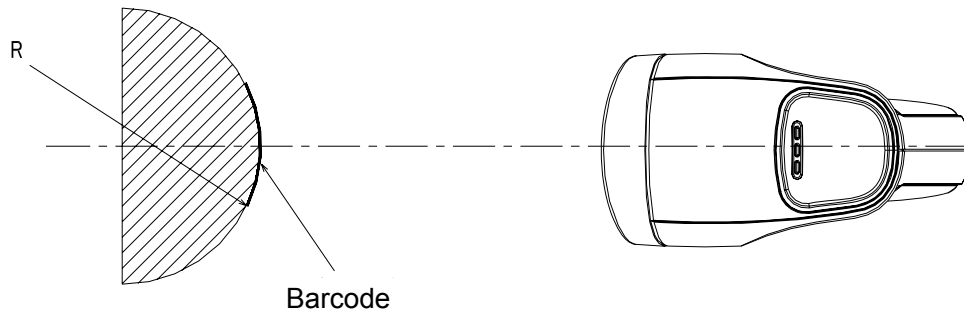


Figure 6: Curvature

Barcode Sample: OPTOELECTRONICS Test Sample
 PCS = 0.9, Resolution = 0.26 mm, Symbology = 9-digit Code 39,
 Quiet Zone = 10 mm
 Distance: 60 mm from the edge of the scanner
 Angle: Skew angle: $\beta = +15^\circ$

8. Bluetooth

OPR-3301 uses ver.1.2 compliant Bluetooth device as a wireless communication interface.
 The Bluetooth device supports SPP (Serial Port Profile) and HID (Human Interface Device).

Feature	Description
Version	1.2
Supported profile	SPP (Serial Port Profile) HID (Human Interface Device)
Communication configuration	1 to 1 One scanner to one host system (Do not connect multiple scanners to one host system.)
Scanner operating mode while connected to the host system	Master(OPR-3301) or Slave mode(CRD-3301)
Power saving mode	The scanner does not support sniff mode
Security mode and Encryption	Authentication and encryption enabled: As for the communication between CRD-3301, this mode can be set by enabling the mode for CRD-3301.
Comm. range	10 m *The distance may vary depending on the environment.

9. Default Setting

Scan the following menu barcodes to return to the default settings.

Default Settings 1: Options Readable codes

Symbology	Read	Transmit Code Length	Transmit CD	Calculate CD	Set Prefix	Set Suffix	Other
UPC-A	○	×	○	○	—	CR	
UPC-A Add-on	×	×	○	○	—	CR	
UPC-E	○	×	○	○	—	CR	
UPC-E Add-on	×	×	○	○	—	CR	
EAN-13	○	×	○	○	—	CR	
EAN-13 Add-on	×	×	○	○	—	CR	
EAN-8	○	×	○	○	—	CR	
EAN-8 Add-on	×	×	○	○	—	CR	
Code 39	○	×	○	×	—	CR	Not transmit ST/SP
Code 39 Trioptic	○	×	—	—	—	CR	Not transmit ST/SP
NW-7(Codabar)	○	×	○	×	—	CR	Not transmit ST/SP
Industrial2of5	○	×	○	×	—	CR	
Interleaved2of5	○	×	○	×	—	CR	
Code 93	○	×	×	○	—	CR	
Code 128	○	×	×	○	—	CR	
EAN-128	×	×	×	○	—	CR	
S-Code	○	×	○	×	—	CR	
MSI/Plessey	○	×	○CD1	○CD1	—	CR	
UK/Plessey	○	×	○	○	—	CR	
TELEPEN	○	×	×	○	—	CR	
Matrix2of5	×	×	○	×	—	CR	
Chinese Post Matrix 2of5	×	×	○	×	—	CR	
IATA	○	×	○	×	—	CR	
RSS-14	×	×	○	○	—	CR	
RSS-limited	×	×	○	○	—	CR	
RSS-expanded	×	×	○	○	—	CR	
PDF417	×	×	—	—	—	CR	
MicroPDF417	×	×	—	—	—	CR	
Code 11	×	×	×	○	—	CR	
Korean Postal Code (Code 3of5)	×	×	×	○	—	CR	

1. In the "Reading" column, "■" means "Enable reading" and "X" means "Disable reading."
 2. In the "Transmit code length" column, "■" means "Transmit code length" and "X" means "Do not transmit code length."
 3. In the "Transmit CD" column, "■" means "Transmit check digit" and "X" means "Do not transmit check digit."
 4. In the "Calculate CD" column, "■" means "Calculate check digit" and "X" means "Do not calculate check digit."
- "—" means "not supported."
5. In the "Prefix" column, "—" means "there is no prefix setting."

Default Settings 2: Read Options, Trigger, Buzzer

Item	Default Setting
Setting the number of characters	Fixed length OFF all codes
Read mode	Single read
Multiple read reset time	500 ms
Add-on wait mode	500 ms
Multiple label read	Disable
Multiple column read	Disable
Redundancy (*1)	Read 1 time, redundancy = 0
Trigger switch	Enable
Trigger repeat	Disable
Auto trigger	Disable
Read time	2 seconds (when trigger enabled)
Margin check	Normal
Buzzer duration	50 ms
Buzzer loudness	1 (max.)
Start up buzzer	After transmission
Good read LED	Indicator duration 200 ms

*1: Redundancy: Read n times, redundancy = n+1 for the following symbologies and lengths:

Symbology	Number of digit
Code 39	5 or less
NW-7(Codabar)	All
IATA	8 or less
Industrial2of5	8 or less
Interleaved2of5	8 or less
MSI/Plessey	4 or less
Code 11	5 or less

Default Settings 3-1: Communication options

Item	Configurations	
Wireless communication function	Destination setting	Cradle (RS232C) connection
	No reception memory (data correct) setting	Disabled
	Enable / Disable connection with trigger switch	Disabled
	Trigger key for connecting hold time setting	Disabled
	Trigger key for disconnecting hold time setting	Disabled
	Automatic disconnection time setting	Disabled
	Automatic re-connection valid time setting	5 minutes
	ACK/NAK control	Nonprocedural
	ACK/NACK	1 second
	PIN code setting	enable (接続先 BD アドレス下 4 桁)
Bluetooth Connection function	BD address automatic connection setting	有効
	Authentication	有効(ペアリング処理自動実行)
	Encryption	なし

*In the default setting, the cable used to connect CRD-3301 and host is RS232C.

*When connecting CRD-3301 and host via USB, set the destination to cradle (USB-HID).

*Do not set the PC [CNPC] as destination when connecting CRD-3301 and host.

Default Settings 3-2: Read, trigger and buzzer options

Parameter	Setting
Baud rate	9600 bps
Parity bit	No parity
Data length	8 bits
Stop bit	1 bit
Hand shaking	No handshake
ACK/NAK	Nonprocedural
CS time out	Indefinitely
Inter character delay	No delay

Default Settings 3-3: Communication between CRD-3301 and host with USB cable

Item	Default setting
Keyboard language	USA
Numerical output	Full Key Code
Caps Lock mode	No Caps Lock Mode
Inter character delay	No deklay

10. Default Setting

The serial number shown below is affixed to the scanner.

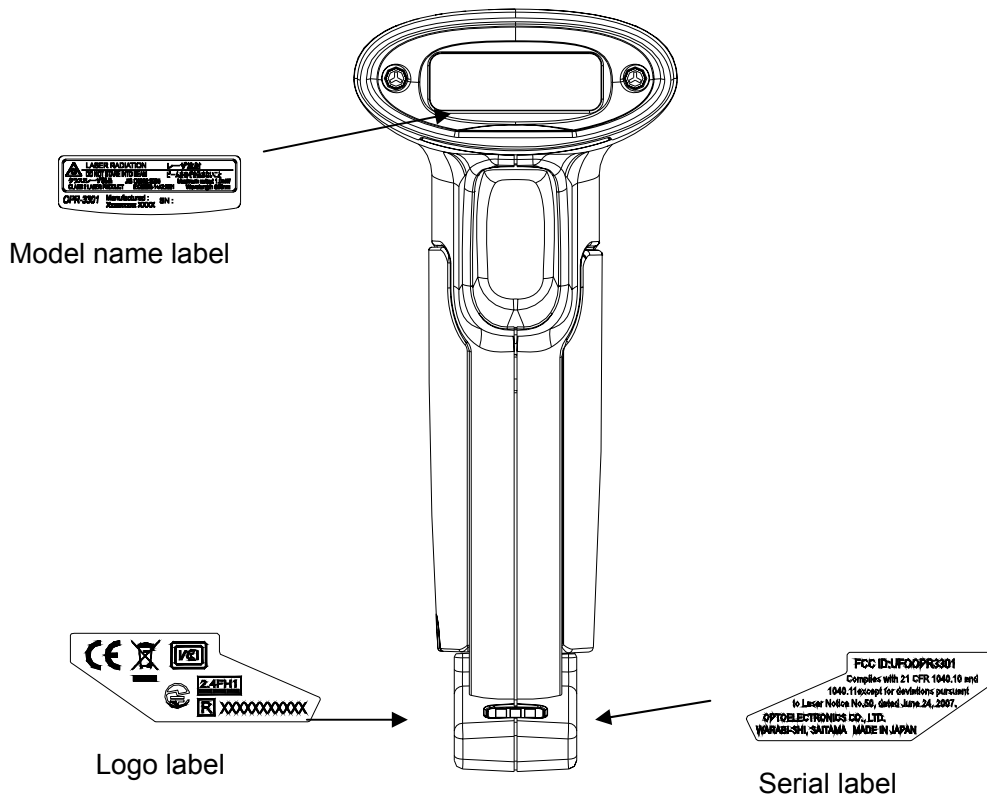


Figure 7: Curvature

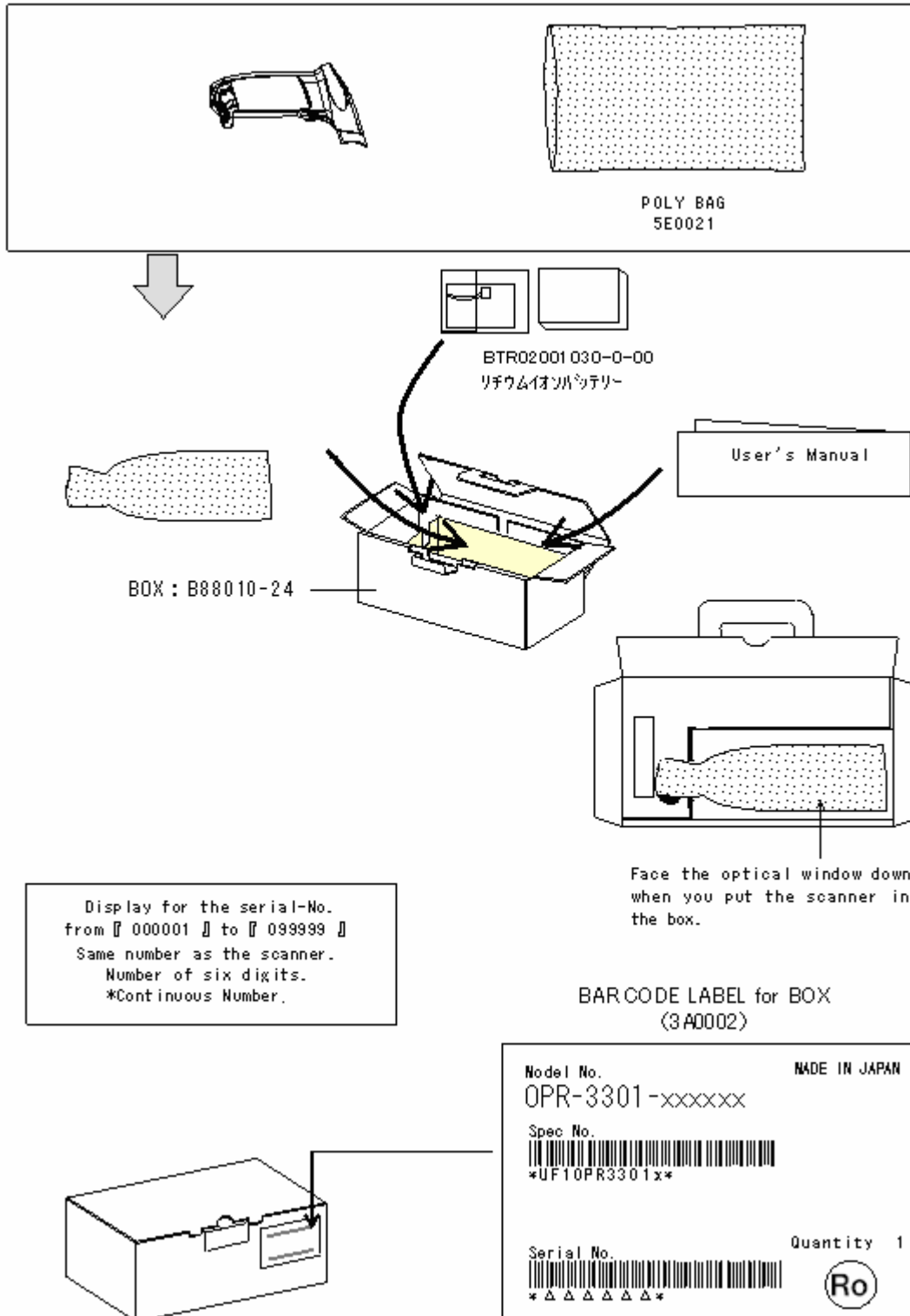
Model name label: Shows product name, product number, production date and the laser class “2” logo.

Logo label: Shows the regulations which the scanner supports.

Serial label: Shows grant number and descriptions which are compliant with the regulations.

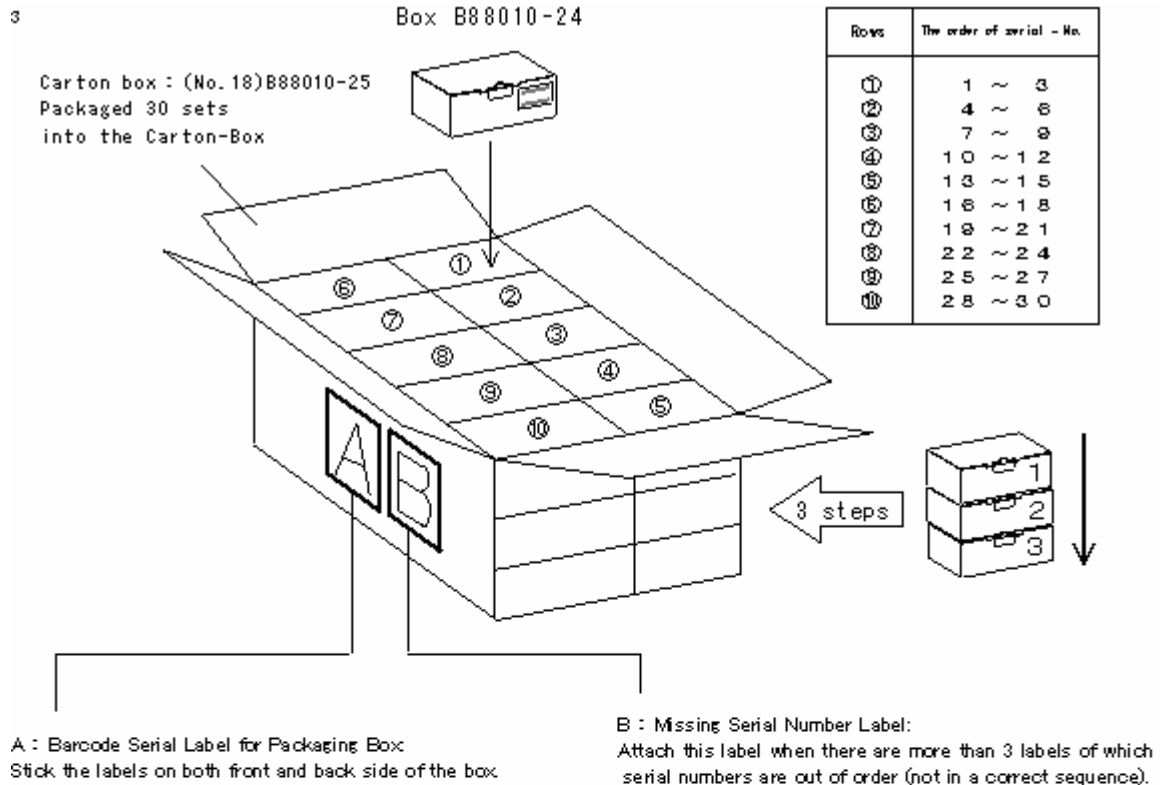
11. Packaging Specifications

11.1. Individual Packaging Specifications



Put the scanner in the box after putting it in the foam bag.
Dimensions: 55(W) × 120(D) × 105(H)mm

11.2. Collective Packaging Specifications



(3C0006)

(3C0007)

Label A (3C0006) details:

UNIVERSAL C/No. △△△
MADE IN JAPAN

Product OPR-3301-xxxxx

POP [Barcode]

Spec#JPN [Barcode]

Q'ty [Barcode] S/N (from) [Barcode]

△△/△△△ S/N (to) [Barcode]

Missing Serial Number Missing Q'ty △

ROM-Ver. △△△△△

Shipping Date △△△△/△△/△△

OPTO ELECTRONICS Co., Ltd.

Label B (3C0007) details:

UNIVERSAL C/No. △△△
MADE IN JAPAN

Missing Serial Number Missing Q'ty △

3 [Barcode]

4 [Barcode]

5 [Barcode]

6 [Barcode]

7 [Barcode]

8 [Barcode]

9 [Barcode]

10 [Barcode]

11 [Barcode]

12 [Barcode]

OPTO ELECTRONICS Co., Ltd.

Figure 8: Individual Packaging Specifications

Note: The "RO" mark labeled on the package tray or package box guarantees that the applicable product has passed our test of RoHS restrictions compliance (the restriction of the use of certain hazardous substances in electrical and electronic equipment, 2002/95 EC). However, this document does not have any legal weight in the EU.

11.3. Accessory Specifications

The following table shows a list of accessories for each model.

- User's manual
- Dedicated battery pack (BTR02001030-0-00)

12. Environmental Specifications

12.1. Operation Temperature and Humidity

-10 to 60°C (When charging: 0 to 40°C)

5 to 95% (No condensation, no frost)

* Charging may be stopped when the temperature is over 40°C due to the thermo protection.

12.2. Storage Temperature and Humidity

-20 to 60°C (When charging: 0 to 40°C)

5 to 95% (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	0 to 4,000lx
Fluorescent light	0 to 4,000lx
Sunlight	0 to 80,00lx

<Conditions>

Barcode Sample: OPTOELECTRONICS Test Sample,
 PCS = 0.9, Resolution = 0.25mm, Symbology = 9-digit Code-39, Quiet Zone = 10mm,
 N/W Ratio = 1:2.5

Distance: 100 mm from the edge of the scanner

Angle: $\alpha = 0^\circ$, $\beta = 15^\circ$, $\gamma = 0^\circ$

Curvature: $R = \infty$

Power supply voltage: 3.7V

*Specular reflection should be avoided.

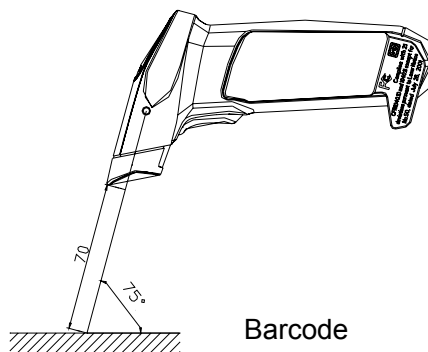


Figure 9: Ambient Light Immunity

12.4. Drip and Dust Proof

IEC IP 54 compliant

12.5. Electrical Specifications

Specifications mentioned below include combination of the scanner and CDR-3301.

- Withstand Voltage: AC 1500 V/ per 60 seconds, 10mA or less
- Insulation Resistance: DC 500 V, 2 M Ω or higher
- Current Leakage: 250 μ A or less / AC 250 V 60 Hz
- Power Line Noise Immunity: \pm 1kV and higher
- Static Electricity Noise Immunity:
 - No destruction found: \pm 15kV (air or direct discharge)
 - No malfunction found: \pm 8 kV (air or direct discharge),
 \pm 6kV (contact, direct or indirect discharge)

Note: Testing method complies with IEC-61000-4-2. 150pF, 330 Ω

12.6. Drop Test (Without Individual Packaging)

No malfunction occurred after the following drop test.

Drop Test: Drop the scanner from a height of 150 cm onto a concrete floor (three times in each of 5 angles as shown in the figure).

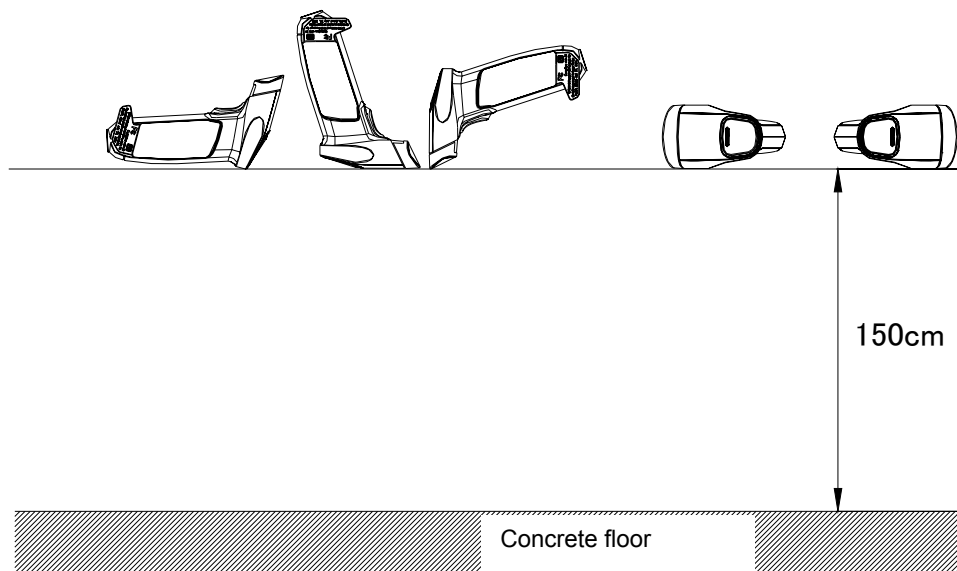


Figure 10: Drop test

12.7. Drop Test (With Individual Packaging)

No malfunction occurred after the following drop 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 total drop tests)

12.8. 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 19.6m/s² (2G) for 30 minutes (60 minutes for one cycle) in non-operating state. Repeat this routine in each X, Y, Z directions.

13. Reliability

MTBF (Mean Time Between Failures) of this product is as follows.

Product (excluding laser module): 48,000 hours

Laser module: 10,000 hours

*The estimate of MTBF and product life cycle is based on standard operation of the product within the recommended temperature range and without extreme electronic or mechanical shock.

*The figure specified above does not consider the battery pack, because it can be easily affected by environments and charging conditions.

14. Warranty

14.1. Warranty Period

OPTOELECTRONICS Co., Ltd. warrants that this product is free of defects or malfunctions for a period of twelve (12) months from its shipment. In case of having defects or malfunctions caused by normal usage in accordance with this specification during the foregoing warranty period, OPTOELECTRONICS shall repair or adjust the product free of charge.

Any repair or replacement of the product after the foregoing warranty period shall be charged at regular repair rates.

If defects or malfunctions were caused by customer mishandling, product repairs or replacement will be charged at regular repair rates, even during the foregoing warranty period.

14.2. Delivery

Products for maintenance or repair shall be sent back to OPTOELECTRONICS. The sender is responsible for all shipping costs.

14.3. Repair Timeframe

Repaired products shall be shipped back to the customer within 20 days after acceptance by OPTOELECTRONICS. However, the time needed for the repair of products with early failures need to be separately discussed with Optoelectronics.

Expedited repairs may be available, subject to terms agreed to by OPTOELECTRONICS and the customer.

14.4. Maintenance Period

The maintenance period of this product is 5 years after its shipment.

OPTOELECTRONICS may discontinue maintenance for this product during the 5-year maintenance period if a satisfactory replacement product or maintenance solution is agreed to.

14.5. Other

Any additional warranty issues must be discussed with OPTOELECTRONICS on a case-by-case basis.

15. Regulatory Compliance

15.1. Laser Safety

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

15.2. Product Safety

- EN60950-1:2001/IEC60950-1:2001

15.3. EMC

- EN55022
- EN55024
- FCC Part15 Subpart B,C

< Subpart 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.

< Subpart C >

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.

FCC Radiation Exposure Statement

The OPR-3301 complies with FCC radiation exposure limits set forth for uncontrolled equipment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65. The OPR-3301 has very low levels of RF energy that it is deemed to comply without testing of specific absorption ratio (SAR).

•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.

15.4. Other

- Radio Law 38-24-1
- Bluetooth logo certification

16. RoHS

OPR-3301 is a RoHS compliant product.

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

17. Precautions

17.1. Precautions about laser light

- 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.

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

17.2. Handling

(1) Shock

- Do not throw or drop the scanner.
- Do not squeeze the scanner between heavy items.

(2) Temperature Conditions

- Do not use the scanner at temperatures outside the specified range.
- Do not pour boiling water on the scanner.
- Do not throw the scanner into the fire.

(3) Foreign Materials

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

(4) Other

- Do not disassemble this product.
- Do not use the scanner near a radio or a TV receiver. It may cause reception problems.
- Do not use the scanner near a device which generates excessive static electricity. It may cause problems.
- The device may not perform properly when placed near a flickering light, such

17.3. 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

17.4. 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. Bluetooth

To communicate via Bluetooth, the device which OPR-3301 is connected to must support the same Bluetooth version and profile as OPR-3301's.

- OPR-3301 is compliant to Bluetooth standards. However, we cannot assure the connection between OPR-3301 and other Bluetooth devices which have not been tested.
- Bluetooth supporting devices use 2.4 GHz frequency band. However, many other sorts of devices also utilize this frequency band. It may effect the communication speed or communication range of this data collector.
- The use of OPR-3301 outside of the European Union, the United States and Canada is punishable under the law.
- Communication speed and communication range of OPR-3301 may differ due to the obstacles and radio wave conditions between OPR-3301 and the device, which OPR-3301 is connected to.
- Conditions of the device, which OPR-3301 is connected to, may also affect the communication speed and communication range of OPR-3301.

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 radio wave to avoid the interference.

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

The content of this specification manual may change without any notice.

18. Auto Trigger

Auto Trigger Sensor

When auto trigger is used, the scanner starts barcode reading after detecting a change in reflection in the detection area. The scanner will be triggered if the sensors detect changes in brightness in the detection area.

Auto trigger distance: 40mm from the edge of the scanner.

Conditions

Moving speed:	100 ±10 mm/s
Angle:	Skew angle as specified in chapter 7-3 excluding pitch angle and dead zone.
Environmental temperature and humidity:	Room temperature and humidity
Environmental illuminance:	500 to 900 lx
Conditions for the auto trigger:	1. Barcode sheet: OPTOELECTRONICS Test Sheet (white) Background: OPTOELECTRONICS Test Sheet (black)
	2. Barcode sheet: OPTOELECTRONICS Test Sheet (black) Background: OPTOELECTRONICS Test Sheet (white)

