

Introduction

- The CRD-3101 is a designated charging and communication cradle for the OPR-3101 handheld laser scanner. This cradle can also be used as a stand when the scanner is not in use.
- Read this quick start guide carefully before installing and/or using this product.
- Keep this quick start guide for future reference and store in a safe place.

Notice

- This quick start guide may be revised or withdrawn at any time without prior notice.
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Caution and Warning

1. Handling Instructions

[CRD-3101]

- Do not attempt to disassemble, modify or update this product.
- Do not drop this product or put heavy items on this product.
- Do not insert foreign substances into this product.
- Do not use this product in the following areas:
 - In areas exposed to direct sunlight for long periods of time.
 - In dusty environments.
 - Near water or other liquids, or in extremely high humidity.
 - Near heat sources, such as radiators, heat registers, stoves, or other types of devices that produce heat.
 - Near microwaves, medical devices, or low-power radio stations.
- If water or any metallic object gets into this product and if you detect smoke or a strange smell coming from the device, please stop operating the unit and contact your nearest dealer.
- When cleaning this product, rub gently with either a soft dry cloth or a damp cloth with mild detergent.

[Battery Pack]

- Do not attempt to disassemble this battery.
- Do not expose the battery pack to liquids or allow the battery contacts to get wet.
- Do not expose the battery pack to heat sources including other devices that produce heat.
- Do not short the power leads the battery pack. If the (+) and (-) terminals come in contact with metals (such as a necklace or hairpin), a short circuit will occur.
- Do not load the battery pack with its (+) and (-) terminals reversed.
- If you come into contact with material from a leaking battery pack, take the following actions:
 - If the material gets into the eyes, do not rub. Immediately flush the eyes with clean water and seek medical attention.
 - If the material comes into contact with the skin or clothes, immediately rinse the affected area with clean water.
- Consult your physician if inflammation or soreness develops.
- Check local regulations for proper battery disposal.

2. Radio Equipment

- Do not remove the certification label.

3. Bluetooth

- Bluetooth is a registered trademark owned by Bluetooth SIG, Inc., U.S.A. and is used by OPTICON under license.
- This product supports Bluetooth wireless communication with other Bluetooth devices that have the same profile.
- This product complies with Bluetooth version 2.0; however, its communication performance with equipment other than cradles or devices stated in this manual is not guaranteed.
- Bluetooth devices use the 2.4 GHz frequency band. Scientific, medical, and industrial devices, including radio stations, microwave ovens, wireless security (camera) systems and WLAN use the same frequency band as this product. Interference from other devices may affect the communication speed or communication range of this scanner or vice versa.

Before Getting Started

■ What's in the Box

Confirm that you have the following items before getting started:

No.	Items	Product No.	Function
1	Cradle	CRD-3101	Designated charging and communication cradle for the OPR-3101.
2	AC Adapter	GP-ACGN-13T-K4-2	Designated AC adapter for the CRD-3101.
3	USB Cable	—————	Designated USB cable for the CRD-3101.
4	RS-232C Cable	—————	Designated RS-232C cable for the CRD-3101.
5	Quick Start Guide	5J0085	Provides product information and instruction guide.

Note: The number of accessories may differ depending on the product specification.
Please contact the nearest dealer if accessories are damaged or missing.

Overview

■ CRD-3101 Basic Specifications

Parameter		Specifications	
Physical Features	Size	(H)115 × (W)100 × (D)185 mm Max	
	Weight	250g Max	
	Color	Light Gray	
Control Section	CPU	16bit CMOS CPU	
	Clock Frequency	12.00 MHz	
	FLASH ROM	256KB	
Comm. Section	Interface	RS-232C: 600bps to 57.6kbps USB: 2.0 HID	
Wireless Section	Frequency	2400MHz to 2483.5MHz	
	Specification	Bluetooth Ver2.0	
	Protocol Stack	RF (Radio Frequency Protocol) BB (Base Band Protocol) LM (Link Manager Protocol) L2CAP (Logical Link Control and Adaptation Protocol) SDP (Service Discovery Protocol) RFCOMM (emulation of RS-232C)	
		Profile	GAP (Generic Access Profile) SPP (Serial Port Profile)
		Transmission Power	Class 2 (4dBm or less)
		Communication Configuration	1 to 1
		Operating Mode	Scanner: Master CRD-3101: Slave
	Comm. Distance	10m (Depends on the operating environment.)	
	Baud Rate	57.6kbps	
	Antenna	1/4 λ (surface mounted)	
	Security	Security and encryption settings are available.	
	Power Supply Section	Operating Voltage	5.7V to 6.3V Designated AC Adapter: 6.0V ± 5%
		Current Consumption	Standby: 90mA or less (when not charging) Max.: 750mA (when charging)
Charging Time		About 5 hours (using an AC adapter)	
		About 10 hours (using USB bus power)	

Parameter		Specifications
Power Feed Section	For Charging the OPR-3101	Output: DC5.6V (Typ.)
		Terminals: +, - and Power Feed Control
Battery Charging Section	For Charging the Battery Pack	Output: DC4.2V (Typ.)
		Terminals: + and -
Durability	Operating Temp.	0 deg. C to 40 deg. C
	Operating Humidity	25% to 85% (non-condensing)
	Storage Temp.	-20 deg. C to 60 deg. C
	Storage Humidity	20% to 90 % (non-condensing)
	Vibration Endurance	Increase the frequency of the vibration from 10 Hz to 100 Hz with accelerated velocity 19.6m/s ² for 6 minutes each in X-, Y- and Z-direction. Repeated this test for 10 times in each direction.
	Shock Endurance	Dropped 6 times onto concrete from a height of 75 cm with no defects found.
	Anti-static Electricity	± 15kV (no destruction)

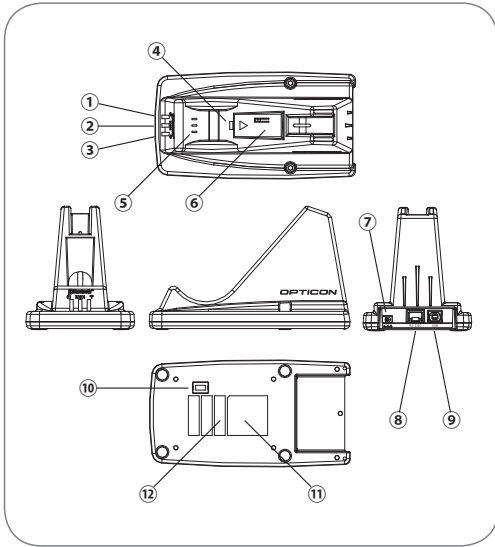
* Some of the product specifications are related to the specifications of the OPR-3101.

■ AC Adapter Basic Specifications

Parameter		Specifications
AC Adapter	Product No.	GP-ACGN-13T-K4-2
	Input	Power Voltage: AC 90V to 264V Current Consumption: 0.2A Max
		Output

Overview

■ Detailed View



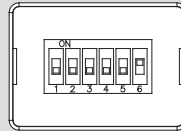
No.	Part	Function
①	Power Supply Status LEDs	Alert users the status of power distribution from the AC adapter or USB bus power to the cradle.
②	Comm. Status LEDs	Alert users the status of the interface and indicates successful data transmission.
③	Wireless Connection Status LEDs	Alert users to the status of Bluetooth connectivity.
④	Charging Status LEDs	Indicate the charging status of the battery.
⑤	Scanner Charging Terminals	Electrical terminals for power distribution and power management.
⑥	Battery Pocket	Designated battery pocket to charge spare battery.
⑦	DC Jack	DC-6V power supply jack. Please use the AC adapter when using the RS-232C interface.
⑧	Modular Jack	Modular jack for the RS-232C interface.
⑨	USB Connector	Connector for the USB interface. It is not necessary to use the AC adapter when using the USB interface.
⑩	DIP Switches	DIP switches to configure settings of the CRD-3101.
⑪	Serial Label	
⑫	Bluetooth Device Address	A barcode which shows the Bluetooth device address of the CRD-3101.

■ DIP Switch (DIPSW) Configuration

Use the DIP switches on the bottom of the CRD-3101 to configure the following settings.

DIP Switch Configurations - Table 1

SW No.	Configuration	Function
DIPSW1	Disable	Reserve Please keep DIPSW1 OFF for conventional operations.
DIPSW2	No Security Settings Enable Response to Inquiry	Enable this switch to disable security settings. This configuration allows the device to make a wireless connection with the security settings disabled.
DIPSW3	Protocol Disable Protocol	Disable the communication protocol. This configuration makes it possible to connect the cradle with Bluetooth devices other than the OPR-3101.
DIPSW4	DTR Detection Disable DTR Detection	Disable the detection of DTR signals sent from the host. The RS-232C interface will automatically be selected when you configure DIPSW4. Please turn ON DIPSW4 when the DTR signals are not sent to the RS-232C interface of the host.
DIPSW5	Factory Settings (Default Setting)	Configure the settings back to the default. This configuration also makes the Flash Memory go back to the default.
DIPSW6	Software Rewrite Mode	This configuration makes the CRD-3101 operate in normal mode. Keep DIPSW6 ON for conventional operations. If you turn DIPSW6 OFF, the CRD-3101 will be in software rewrite mode, which makes it possible to rewrite the software using the RS-232C interface.



* You need to turn each DIP switch ON to configure the settings in the table above.

* All DIP switches are turned ON automatically when the CRD-3101 is turned ON.

* By default, all DIP switches other than DIPSW6 are set to OFF.

DIP Switch Configurations - Table 2

Configuration	DIPSW					
	DIPSW 1	DIPSW 2	DIPSW 3	DIPSW 4	DIPSW 5	DIPSW 6
Disable	×	×	×	×	OFF	ON
No Security Settings	×	ON	×	×	OFF	ON
Disable Protocol	×	×	ON	×	OFF	ON
Disable DTR Detection	×	×	×	ON	OFF	ON
Default Settings	×	×	×	×	ON	ON
Rewrite Mode	×	×	×	×	×	OFF

Using the Cradle

- The CRD-3101 supports RS-232C and USB-HID interfaces.
- When using the USB interface, the cradle uses bus power. Therefore, it is not necessary to use the AC adapter when using the USB interface.



* Please configure the scanner to "connect to cradle" and scan the Bluetooth device address with the scanner again before changing the interface. Please refer to the instruction guide or the specification manual of the scanner (OPR-3101) for the details of such configuration.

* To reduce battery charging time, please use the AC adapter in addition to the USB cable when using the USB interface.

■ LED Notification

Status LEDs	Color	Function
Power Supply	Red	Turn solid RED when the main power is turned ON.
Comm.	Green	Turn solid GREEN during a data transmission.
	Red	Turn solid RED when detecting a data transmission error or when the interface cable is not connected.
Wireless Connection	Blue	Turn solid BLUE while the wireless connection is being made. Flash BLUE when the wireless connection is not made.
Charging	Green	Turn solid GREEN after finish charging the battery or when a fully charged battery is detected. If the battery is not detected or if the battery is not set correctly in the battery pocket, one of the LED turns solid Green and the other LED flashes RED once in every 3.5 seconds.
	Red	Turn solid RED while the battery is being charged. Depending on the remaining battery level, the LED may turn ORANGE first and then change to RED.
	Orange	Flash ORANGE when turning ON the cradle or when the system is in preparation. Turn solid ORANGE upon the completion.

■ Supported Interfaces

RS-232C Interface

Please use the RS-232C connector provided by OPTICON.

USB Interface

The CRD-3101 supports USB1.1, full speed USB interface. The CRD-3101 uses a Hi-POWER (500mA) USB bus power.



* Do not use a hub to connect the CRD-3101 to the host. Please use the designated USB cable provided by OPTICON.

■ Charge Function

- ① Set the designated battery in the battery pocket to charge spare battery. Make sure the electrical terminals of the battery contact the charging terminals in the bottom of the battery pocket.
- ② If the cradle detects the scanner main battery while the spare battery pack is inserted in the battery pocket, the cradle will charge the scanner main battery first.
- ③ Charging Time (to fully charge an empty battery)

Charging Time	Conditions
About 5 hours	When charging the battery using an AC adapter.
About 10 hours	When charging the battery using USB bus power.



* If you try to charge the battery pack when the ambient temperature is outside the range of 0 to 40 degrees C, the cradle may stop charging to protect the battery pack.

* The Charging Status LEDs may turn ORANGE while the CRD-3101 is connected to the host via the USB cable. This signifies that the power feed is below 500 mA, which may require a longer battery charge time. The LEDs turn GREEN when the battery is fully charged.

* Do not use a hub to connect the CRD-3101 to the host, as it may use the available power and keep the battery from charging.

* Please clean the charging terminals of the scanner on a regular basis.

Contact

Please contact OPTICON or your local dealer.

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More product details, additional support, and configuration options (from the Universal Menu Book) are available at www.opticon.com.