RoadRunners Evolution User Guide

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SUMMARY

Revision History

Changes to the original manual are listed below.

Document	Date	Description
1.0	17 June 08	Initial release
1.1	25 Aug. 08	Add "The different connection method" section
1.2	11 Sept. 08	Add "Smart Autoscan" option
1.3	15 Oct. 08	Modify the "MASTER mode" section.
1.4	06 Feb. 09	Modify the "Status Display Summary" section.
1.5	29 April 09	Modify "Installing / Replacing batteries" & "Safety / Ragulatory" sections
1.6	29 May 09	Modify "Safety / Ragulatory" sections

Introduction

The RoadRunners Evolution is easy to use. Just press the trigger in order to switch on the scanner and simply press it again to scan a barcode. The colours of the LEDs indicate the status of the device. A beep indicates when the scanner connects to the remote device and when a barcode is scanned successfully. Acknowledgement of a completed scan is configurable by the user.

Barcodes are transmitted in real time to the remote host devices/terminals using Bluetooth wireless technology or barcodes can be stored in the scanner and later uploaded to a remote device/terminal using Bluetooth wireless technology. You can download software updates as well as additional documentation from http://www.baracoda.com after registration.

Note:

How to know if you have RoadRunners or RoadRunners Evolution?

On the back casing, you can read the Part Number: B4003xxxx for RoadRunners / B4016xxxx for RoadRunners Evolution.

Status Display Summary

The RoadRunners Evolution has two (2) LEDs. There are providing a status regarding the Bluetooth connection and the reading status. The right one is the Bluetooth connection LED (BCL) and the left one is the Reading status LED (RSL).

Reading Status Led

(RSL)

Bluetooth Connection Led

(BCL)

The function of the BCL is to give

- The Bluetooth status of the device (connected or not connected).
- The communication mode of the scanner (Real Time mode, Batch mode or Master Mode).

The function of the RSL is to give:

- The information whether or not a barcode has been read.
- The status of the battery. If battery level will be too low, you will need to recharge the battery immediately.

BCL LED:

Single Blinks (e.g. *pause*pause*…)	The scanner is ready to be connected
Double fast Blinks (e.g. **pause**pause**…)	The scanner is connected
The led colour is Green	The Scanner is set in Real Time mode or in Master mode
The Led Colour is Orange	The Scanner is set in Batch mode
The Led Colour is blinking Orange/Green	The Scanner is set in Batch mode, but no barcode is stored in the memory

RSL LED:

One Single long Blink (green colour)	The scanner has just read and decoded a barcode
One Single long Blink (orange colour)	The scanner is set in Master mode and is trying to connect to the Host address
Double fast Blinks Red	Battery level is low. Please recharge the battery immediately
One Single long Blink Red + Green (solid)	The scanner is charging
Green (solid)	The scanner is fully charged

Special cases:

Both LEDs blinks orange	The scanner is set in the "Real Time with No Data Loss mode" but with no bufferisation (buffer configured to 0) and is not connected. In this particular situation the trigger will not activate the beam: impossible to read barcodes in this mode.

PDA stylus

In order to attach the PDA stylus to the RoadRunners Evolution, insert the stylus into the hole, as showed in Fig.1. Note that there are two holes, symmetric around the principal axe of RoadRunners Evolution. Push downwards, as shown by the arrow n° 2 in Fig.1 till you will hear a clips.

There are two holes, one on both sides.

Note: You will not be able to use the Protective boot and the PDA stylus simultaneously.

Fig.1

Recharging the battery

Recharge the internal battery by using the included AC adapter or the charging cradle (optional). The Adapter rating is 5V, 500mA.

When the scanner is charging, the RSL led (left) has the following status: one single long blink red + green (solid).

When the scanner is fully charged, the RSL led (left) is green (solid).

A full recharge (from completely drained batteries) takes approximately four (4) hours.

When the original batteries wear out, please contact your Baracoda reseller for replacements.

Note: When you insert the RoadRunners Evolution (with its protective boot) in its charging cradle, the scanner will:

- emit a beep.

- and automatically switch on (if it was off).

Installing / replacing batteries

Only use Baracoda approved rechargeable batteries. The use of any other batteries may damage the scanner and void the warranty. Please remove the batteries when you are storing the scanner for more than 30 days.

To insert batteries into RoadRunners Evolution:

1. Use a coin or your finger to unlock and remove the battery cover at the back of the RoadRunners Evolution. Turn the lock underneath the scanner to a horizontal position.
2. Insert the battery lid downwards.
3. Plug the small battery cable into the battery connector (Zone A in Fig. 2).
4. Insert the Baracoda Battery in its location. Pay attention also to well position the battery connector.
5. Slide the cover up and lock it into place.

Fig. 2

Caution. Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Switching on the reader

Remember to fully charge the battery before first use.

In order to switch on the scanner, please press the trigger button.

The scanner will switch off after some period of inactivity. The default time period is ten (10) minutes of scanner inactivity if the device is not connected via Bluetooth, and twenty (20) minutes of scanner inactivity if the device is connected via Bluetooth and if the user don't press the trigger button. These default values can be modified by the end user.

Configuring your scanner

There are two (2) ways to configure your scanner:

- When connected to a host device, the BaracodaManager software (v3.34 min) can be used for multiple setting changes.
- The Configuration barcodes In the Programming Guide can be used to configure the scanner without using outside software applications.

Reset your scanner

To reset the scanner to its "default settings", use BaracodaManager software (v3.34 min) or scan the Reset Configuration barcode.

To reset the **RoadRunners Evolution –L & -Laser**, please scan only "RESET 1" barcode.

To reset **RoadRunners Evolution –Fs (2D Imager),** please scan "RESET 1", then "RESET 2" barcodes.

Reset 1

Reset 2

Security

The Bluetooth connection is secured with a PIN code authentication.

You can configure security (enable/disable/change PIN code) with the BaracodaManager software (v3.34) or with the Programming Guide.

The Security is enabling by default: default PIN code is **0000**.

Symbology

You can enable/disable any type of barcode decoders with both the BaracodaManager software (v3.34 min) or with the Programming Guide.

Data format

The data format is the following: Header + Timestamp + Prefix + Barcode + Suffix

Header	Timestamp	General Prefix	Symbology Prefix	Barcode	Symbology Suffix	General Suffix

Baracoda Header

It is a proprietary data encapsulation. It is necessary to activate the Baracoda header in 2 cases:
- to use the Baracoda keyboard emulation (Kemul) and Terminal.
- to use the "No data loss" mode.

You can configure Baracoda Header through BaracodaManager software.

The Baracoda header is enabled in default settings.

Timestamp

Timestamp can be configured (ON/OFF, synchronise new time) by BaracodaManager and by configuration barcodes.

Timestamp will be in the following format: YYMMDDhhmmss:

YY: YEAR   MM: MONTH   DD: DAY   hh: Hours   mm: Minutes ss: Seconds

General Prefix / Suffix

A prefix and/ or suffix can be added to every barcode sent to the host device. You can configure prefix/suffix through BaracodaManager software or with the Programming Guide.

There is no prefix/suffix in default settings.

Symbology Prefix / Suffix

A prefix and/or suffix can be added to a specific symbology barcode sent to a host device.

Meaning a certain prefix/suffix will be added while reading a specific symbology.

You can configure prefix/suffix through BaracodaManager software.

There is no "symbology prefix/suffix" in default settings.

Barcode Identifier

The scanner can transmit a maximum of 3 digit barcode identifier codes for different types of barcodes (symbologies).

If the option is selected, the Barcode Identifier is added at the beginning of the barcode frame.

List of identifier codes can be found in the Programming Guide. You can activate barcode identifier through BaracodaManager software or with the Programming Guide.

The barcode identifier is disabled in default settings.

Beeps and LEDs

You can enable/disable Beeps / LED Lightening using both the BaracodaManager software (v3.34 min) or the Programming Guide.

Power management

Mutliple parameters exist to optimize the battery autonomy ("Sniff period", "Shutdown timer", etc…)

RoadRunners Evolution is configured at 20dBm (Bluetooth Class.1) by default.

The BaracodaManager software (v3.34 min) can be used for multiple setting changes.

Low battery

An alternation of red and green blinking on the two (2) LEDs indicates that the battery level is low. Recharge battery immediately. If you continue using the scanner, it will continue working until a triple beep occurs: at that moment the reader will shut down and you will be forced to charge the scanner.

Quick Start up guide

How to read barcodes

In order to switch on the scanner, please press the trigger.

Position the scanner so the light beam fully overlaps and crosses the barcode. The scanner will emit a beep when the scan is successful.
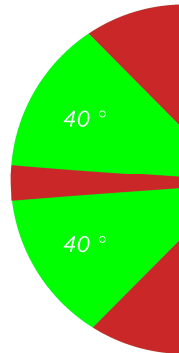
Sample Barcode

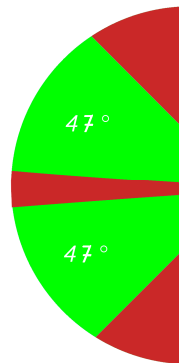* 1 2 3 4 5 6 7 8 - *

Proper scanning position
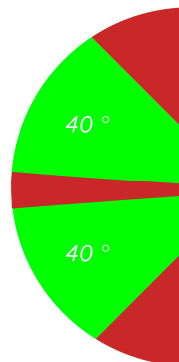
BRR –L Evolution : CMOS

40°

BRR-LA Evolution : Laser

47°

BRR-Fs Evolution : 2D Imager

40°

The different usage modes

Real Time mode

In real time mode, the barcode is decoded and transmitted to the remote host without any delay. If the scanner is not connected, the data is lost (Status RSL Led: red flash).

Real Time mode with No Data Loss option

If the No Data Loss option is activated and if the scanner is not connected or out of Bluetooth range, the scanner will store the data. It can memorise up to 10 000 barcodes (UPC format) and later automatically upload them to the remote host when a Bluetooth connection is established to the host.

Every barcode sent to the host must be acknowledged by the host. If the host fails to send an acknowledgement, the scanner will continue to transmit the barcode until the host does send an acknowledgement.

This acknowledgment is disabled in the default settings. It is strongly recommended to set the No Data Loss mode to ON. This configuration can be set with the BaracodaManager software or with the Programming Guide.

Additionally, this protocol acknowledgment allows an end user to set an audio acknowledgment indicating that the barcode has been successfully transmitted to the host.

Batch mode

Barcodes are always stored in the scanner. Once the batch mode is selected, the BCL led (right) emits an orange flash. In batch mode, the barcode can read up to 10 000 barcodes (UPC format) and store them into its non-volatile memory for later transmission to the host.

To upload barcodes from the scanner, connect it to the host computer via Bluetooth. The BaracodaManager software is used to configure the location where the barcodes are sent once the barcodes are extracted from the scanner.

Once connected, the scanner will wait for the appropriate command in order to start uploading the barcodes: this command can come from:

- The BaracodaManager: The user has to click on the button "Upload".
- A configuration scan barcode: the user has to read the appropriate configuration barcode.

Be aware that with BaracodaManager (v3.34 min), two (2) different ways to upload barcodes are possible:

- To an application window: In this case always double check before starting the upload procedure that the cursor in your text window is active. Otherwise you will loose all the data saved into your scanner.
- To a .txt file (default option). The BaracodaManager gives you the possibility to modify the name of the file in which you may want to save the data.

The scanner can be configured to automatically reconnect with the BaracodaManager software.
Another connectivity parameters exists: Master mode (the scanner will create the connection to the Host).

The different connection methods

There are two (2) different ways to create a connection from a Host and a scanner:

- **Slave mode (by default)**
The Host (PC, BaracodaManager, …) is creating the connection onto the scanner.

- **Master mode**
The scanner is creating itself a connection to the recorded Host Bluetooth address. This connection attempt is set after a scan of barcode. The configuration of Host address (on which the scanner will set up a connection to) can be done:
  - o   Via BaracodaManager software (v3.35 min).
  - o   Via scan of barcodes.

All usage modes (Real Time, No Data Loss, Batch) are obviously available.

The different reading modes

RoadRunners Evolution has four (4) reading modes. These modes can be changed through both the BaracodaManager software and the Programming Guide.

Trigger mode (default setting)
Simply press the trigger when you want to scan a barcode.

Aiming mode (only available for RoadRunners Evolution 1D & Laser, not for 2D Imager)
The Aiming mode has been developed for users who need to scan barcodes very close one to another and need to avoid reading a wrong code. Once in this mode, in order to read a barcode user will have to press the trigger twice. Pressing it the first time will switch on the beam but will not switch on the decoder (thus allowing user to aim at the correct barcode) while pressing the trigger the second time will activate the decoder thus allowing the scanner to actually decode the barcode.

Autoscan mode
This mode enables to scan continuously. In Autoscan mode, the scan beam is continuously on.

Smart Autoscan mode
For a battery power consumption optimisation issue, the scanner will be continuously flashing.

Option: RoadRunners Evolution allows to activate the option "No duplicate scans" order to not scan twice in the same barcode. By default, this option is disabled, but can be changed through both BaracodaManager software or Programming Guide.

The different ways to connect Roadrunners Evolution to a host

Baracoda proposes three (3) ways to simplify this process. Just choose the most appropriate one according to your specific needs.

For users: Complete Plug&Scan hardware solutions

The easiest way to connect a Baracoda scanner with a host computer is to use the Baracoda Plug and Scan Bluetooth dongles. Baracoda offers the RS232 Plug&Scan Bluetooth serial dongle or the USB Plug&Scan Bluetooth dongle to get connected to a host computer. To use one of these devices:

1. Plug the dongle into the USB port or into the RS232 port of the computer.
2. Wait 5 seconds for the host computer to recognize the Plug&Scan dongle.
3. Scan the "Connect barcode" available on the Plug & Scan dongle just once.
4. Within less than 20 seconds the LED on the scanner will start double flashing green: you are now paired and connected!

For the USB Plug and Scan Dongle: Once the dongle is connected to the scanner open the target application (such as Notepad, Excel and Word). Make sure the active cursor is where the user wants the barcode information to be placed and start scanning barcodes.

For the RS232 Plug and Scan Dongle, the application will have to receive the information from the serial port in order for the application to receive data from the serial port download the Kemul Software on the Baracoda Website http://www.baracoda.com/

Pease note that The scanners are set by the Baracoda Plug&Scan USB in "no data loss mode" ON by default.
The No Data Loss mode allows the reader to buffer barcodes if the barcodes are read out of range.

For users: software solutions

Baracoda provides two different software packages to manage the Baracoda Bluetooth barcode devices:

- K-Emul lets you insert the scanned barcode value in the selected field. It also allows adding a prefix and a suffix.

- BaracodaManager is a user-friendly, advanced software that inserts the scanned barcode in a text field of the target application (Kemul plug-in) or displaying the barcode (Terminal plug-in), presents the following features: very easy connection (one click connectivity), automatic reconnection, buffers data in memory and automatic re-transmission.

Please check the compatibility for some specific hosts (see BaracodaManager compatibility table on www.baracoda.com).

How to quickly verify that your scanner is working correctly, using the BaracodaManager:

1. Make sure that your host device (PC or PDA) is Bluetooth enabled. If not, please contact your reseller.
2. Install the BaracodaManager (updates can be downloaded from http://www.baracoda.com/). Refer to compatibility table for specific hosts.

If your Bluetooth software is not compatible, you can test your scanner with Hyperterminal or Kemul. Refer to Communication Protocol documentation. (Download on http://www.baracoda.com/download.)

3. Configure the BaracodaManager.

- Start the BaracodaManager by selecting Start> Programs> BaracodaManager> BaracodaManager. The application automatically searches for wireless scanners.
- Place the scanner in discovery mode by pressing the trigger button.
- Highlight the scanner in the Devices in Range box and click the Add Button.
- The Bluetooth Stack asks for the passkey. While the message displays, click on the Bluetooth connection icon in the system tray at right side of the task bar.
- Enter **0000** as the default Bluetooth Passkey Request dialog box.
- Look at the status of the scanner in the BaracodaManager application window. When the status changes to "connected", the scanner is ready to be used.

4. The first time the scanner is configured, the BaracodaManager opens a terminal window. Scan a barcode and the data will appear in the terminal window

- Close the Terminal window by clicking on exit
- Select the Kemul plug-in from the drop down menu. For more information, see the BaracodaManager documentation.

5. When you have finished your session, click on the Exit Button of the application to save your configuration.

For developers: Baracoda Software Development Kit (SDK)

The Baracoda SDKs are created for developers who want to integrate the barcode collection functions into their own program code, thus enabling end-users to run a single software program. This eliminates the need to run the Baracoda Manager software in addition to a third party application.

BaracodaManager uses libraries that provide an abstraction layer allowing developers to integrate Baracoda products into their own application very rapidly. Moreover, these libraries will deal with all the low-level routines, timeouts, connections and configuration management.

These libraries are available to developers for free (www.baracoda.com for more information)

Safety / Regulatory.

FCC:

Product FCC Id: QSH AIRRNA

Interference statement:
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.

Modification statement:
The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Baracoda Wireless Technology, may void the user's authority to operate the equipment.

Class B digital devices regulatory notice:
This equipment has been tested and found to comply with the limits 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 in accordance with 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 can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by 1 or more of the following measures:
- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio or television technician for help

Wireless notice
This product emits radio frequency energy, but the radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact with the antenna during normal operation is minimized. The system antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

EU:

This equipment is intended to be commercialised in all the countries of the European Union and there is no commercialisation or operational restrictions in any of the countries.

Hereby, Baracoda Wireless Technology declares that this Bluetooth barcode scanner is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The declaration of conformity is in progress.

Laser notice

Use of controls or adjustments or performance of procedures other than those specified herein may result in exposure to hazardous visible laser light.

The laser scanner utilizes a low-power laser diode. Although staring directly at the laser beam momentarily causes no known biological damage, avoid staring at the beam as one would with any very strong light source, such as the sun. Avoid that the laser beam hits the eye of an observer, even through reflective surfaces such as mirrors, etc.

The following information is shown on the laser scanner device class label:

Others indications:

This device is a radio transmitter and receiver. It is designed and manufactured to not exceed the limits for exposure to radio-frequency (RF) energy, as recommended by the EU & FCC Councils. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population.

This directive includes as one of its essential requirements the protection of the health and safety of the user and any other person. In respect of these recommendations, the device should not be body worn (in the pocket for example) while it is operational. The unit should be turned off or not transmitting in those circumstances.

Limited Warranty.

Manufacturer warrants that the product will be free of defects in material and workmanship for one (1) year from the date of shipment. Manufacturer will, at its option, either repair, replace or refund the purchase price paid by buyer for the defective products.

Such repair, replacement or refund shall be buyer's sole remedy in the event of Manufacturer's breach of this limited warranty. Repaired or replaced parts or product may include new, reconditioned or remanufactured parts and equipment at Manufacturer's option. All costs associated with shipment to Manufacturer for warranty service, including but not limited to freight, duties, insurance and customs fees are buyer's responsibility. Manufacturer will pay the freight costs (duties, insurance, customs and any other fees are buyer's responsibility) associated with the return shipment to buyer. The method of shipment will be at Manufacturer's discretion. Repair or replacement of any parts or equipment does not extend the period of warranty provided for herein. THIS LIMITED WARRANTY IS MANUFACTURER'S ONLY WARRANTY. MANUFACTURER DOES NOT GIVE WARRANTIES OF MERCHANTABILITY OR WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. To take advantage of this warranty, buyer should contact the seller not the Manufacturer. The warranty set forth herein does not cover and Manufacturer will have no obligations hereunder if any non-conformance is caused in whole or in part by; accident, transportation, neglect, misuse, alteration, modification, or enhancement of the products or incorporation, interfacing, attachment of any feature, program, or device to the Products by a person or entity other than Manufacturer, failure to provide a suitable installation environment, use of the products for other than the specific purpose for which the products are designed or any use of the product not in accordance with the User Guide or other misuse or abuse of the product. The warranty does not cover problems linked to batteries.