

RS232 dongle Plug & Scan Communication Protocol

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SUMMARY

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Revision History

Changes to the original manual are listed below.

Document	Date	Description
3.27	06 Aug 08	Initial release
3.27.1	20 Aug 08	updated command 0xFF details
3.28.1	17 April 09	Updated version v3.27.1 to v3.28.1 for the new RS232 Plug & Scan version

1. Introduction

1.1. Generalities

The Plug&Scan solution enables a simple, reliable and efficient use of its compatible barcode readers (the whole Baracoda product range) thanks to Bluetooth. The RS232 version allows the connection on any RS232 enabled terminal.



The dongle allows a simple and secure Bluetooth connection: just scan the « connect barcode » (on the dongle) and the scanner gets connected and ready to operate.

The dongle is compatible with the whole product range, and with a certain number of them, is able to automatically configure them after the connection.

The messages described in this document can be:

Host to dongle messages: the packet is sent only by the host to the dongle

Dongle to host messages: the packet is sent only by the dongle to the host

1.2. Generic packet

The dongle will parse data respecting a specific format.

1.2.1. RS232

All the frames incoming to the RS232 dongle are formatted as shown:

Header	Code ID	Length	Payload
4 bytes	1 byte	2 bytes	N byte(s)

Frames sent by the dongle via its RS232 link can have other formats.

1.2.1.1. Header

The 4 bytes for the header are always the same: 3C 3A 3F 3E for "<:?"

1.2.1.2. Code ID

The Code ID, encoded on 1 byte, corresponds to the command to send.

Cf. §2 for complete list of code IDs.

1.2.1.3. Length

Depending on the selected code ID the payload length may vary (from 0 to 65535 bytes), its length is specified on the 2 bytes of the « length » field.

1.2.1.4. Payload

For the « get » commands, no payload is required since the dongle responds with the requested data. The specified length in the « length » field is then 0 and no byte constitute the payload. When the sent command is a « set » command, the dongle parses and treats the command if its format is correct but does not answer.

1.2.2. Bluetooth

All the commands described in this document can also be sent via Bluetooth thanks to a Baracoda barcode scanner by scanning configuration barcodes

Commands respecting the above format can be encoded into Code128 barcodes.

2. Communication protocol

2.1. Dongle to HOST messages

Data coming from the dongle can have different formats depending on the mode it is running.

2.1.1. Get version

The response to a “Get version” command (CodeID 0x76) is sent raw via RS232.

2.1.2. Command responses

When applicable (if the dongle is supposed to respond to a command, except the “Get Version” command), the dongle responds using the frame format described in §1.2.1.

2.1.3. In mode 0 (Standard Plug&Scan)

In mode 0, all other incoming data is raw barcode data gathered by the barcode scanner.

2.1.4. In mode 1 (Transparent Plug&Scan)

In mode 1, all other incoming data is directly sent by the scanner, without any intervention from the dongle.

2.2. HOST to Dongle messages

2.2.1. Communication messages

Code ID	0x02
Command	Disconnect
Description	Disconnect scanner from dongle and do not auto reconnect to it
Payload	None
Response	None

Code ID	0x08
Command	Set prefix
Description	Defines (and enable) a prefix
Payload	0-8 byte(s): { prefix (default : none)} If no payload, prefix is disabled.
Response	None

Code ID	0x0a
Command	Set suffix
Description	Defines (and enable) a suffix
Payload	0-8 byte(s): { suffix (default : none)} If no payload, prefix is disabled.
Response	None

Code ID	0x1a
Command	Reboot
Description	Reboots the dongle
Payload	None
Response	None

Code ID	0x1b
Command	Forward
Description	Forward message to connected device
Payload	x byte(s): { message }
Response	None

Code ID	0x29
Command	Set UART parameters
Description	Sets the UART parameters (BaudRate, parity, stop bits).
Payload	4 bytes: { Baud rate (MSB) Baud rate (LSB) Stop Bits Parity Bits }
Response	None

Available settings are:

Baud Rate	Value
Don't change	0x0000
9 600 (default)	0x0027
19 200	0x004F
38 400	0x009D
57 600	0x00EC
115 200	0x01D8
230 400	0x03B0
460 800	0x075F
921 600	0x0EBF
1 382 400	0x161E

Parity	Value
Same	0x03
None (default)	0x00
Odd	0x01
Even	0x02

Stop bits	Value
Same	0x02
One (default)	0x00
Two	0x01

Code ID	0x31
Command	Set Upload messages use
Description	Enable/Disable use of upload messages
Payload	1 byte: { 1 : Enable 0 : Disable (default)}
Response	None

Code ID	0x4b
Command	Set Ack mode
Description	Configure the dongle with the setting to give to the scanners at auto configuration step.
Payload	1 byte: { 0 : Real Time, without no data loss mode 1 : Real Time, with no data loss mode (default) 2 : Batch mode (if supported by scanner)}
Response	None

Code ID	Exception
Command	Reset dongle
Description	Resets the default dongle's settings. WARNING: this command does not respect the standard frame format : there is no length field : “<:?>Rst” should be sent (or in hexa : 3C 3A 3F 3E 52 73 74)
Payload	N/A
Response	None

Code ID	0x76
Command	Get Version
Description	Get the dongle's firmware version
Payload	None
Response	(The response follows the protocol format) 18 bytes : “Baracoda P&S 3.xx” 3.xx being the version

Code ID	0xFE
Command	Event messages
Description	These are dongle to host messages. These inform the host about some events concerning the dongle's operation.
Payload	1 to N Bytes : {Event ID} {N-1 bytes, depending on the event ID}
Response	None

Event IDs:

Event ID	0x00
Event	Connection message
Description	This event is sent to the host 1,6s after the connection, when the auto configuration is done.
Payload	6 bytes : The 6 bytes of the connected scanner's BDA
Response	None

Event ID	0x01
Event	Disconnection message
Description	This event is sent to the host when a disconnection occurs with the connected scanner (except when it occurs from a hard switch off of the dongle).
Payload	None
Response	None

Code ID	0xFF
Command	Get/Set Dongle mode
Description	Get or set (depending on the length provided with the command) the dongle's mode.
Payload	GET : 0 byte SET : 1 byte: { mode : 0 = standard P&S mode (default) 1 = transparent}
Response	GET : 1 byte: { mode : 0 = standard P&S mode (default) 1 = transparent} SET : None