DATALOGIC

DLR-BT001-xx Family

RFID UHF Bluetooth® Pocket Reader
EU/US

Product Reference Guide

Table of Contents

NOTES

RFID Reader DLR-BT001

General Information

The DLR-BT001-XX is a feature-rich hand-held UHF RFID Reader. It is available in two different models to fit the different frequency standards in the EU and US regions.

The reader is compliant with UHF RFID ISO 18000-63 and EPC Class 1 Gen 2 standards. The reference document is: "EPC Radio-Frequency Identity Protocols Generation-2 UHF RFID", Protocols for Communications at 860MHz-960MHz, Version 2.0.1 (April 23, 2015).

The DLR-BT001-XX has an integrated antenna suited for short to medium range applications. Thanks to the Bluetooth® communication interface, it is a perfect UHF RFID add-on for any Bluetooth® enabled host such as a PC, a smartphone, a PDA or a tablet. The reader is compatible with Windows XP/7/8/8.1, Windows CE/Mobile and Android. A micro-USB connector conceived mainly for power recharge purposes, is also a useful communication interface.

The reader can also operate in 'Buffer Mode", allowing to store EPC codes into the internal memory when the communication links (USB or Bluetooth®) are not available.

Table 1- Models P/N

MODEL P/N	RF carrier freq
DLR-BT001-EU	865.6 ÷ 867.6 MHz
DLR-BT001-US	902.0 ÷ 928.0 MHz

⚠️ **WARNING**

The battery is not initially fully charged. Charge it before use. See Charging the Battery on page 5.

General Features

The DLR-BT001-XX supports a Bluetooth® native keyboard emulation allowing to interact directly with legacy application, office automation SW or any other generic solution requiring manual input. When paired to a smartphone or to a tablet, the Device is a cost-effective alternative to more expensive handheld devices. Designed for mobile operators in indoor or outdoor[1] areas, DLR-BT001-XX is ideal for in-store inventory management, field sales mobility, service & maintenance applications.

The device easily performs the reading of a population of UHF Tags being located in its proximity and preferably in front of it.

When the Host / Reader Link is not available, the reader is able to operate in "Buffer Profile", allowing the storage of EPC codes into its internal memory for a later download.

Special attention has been given to minimize the current consumption and extend battery duration by limiting the active reading time.

A USB connection is mainly dedicated to battery charge, but could act as an auxiliary virtual com port (VCP) useful during setup, configuration and downloading actions.

Using the DLR-BT001

The DLR-BT001-XX is a hand-held UHF RFID reader with integrated antenna. The reader can send EPC codes to a PC, tablet or smartphone via USB or Bluetooth. The reader's front panel is the user interface.

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1. Pay attention to the weather conditions because the device is not waterproof.
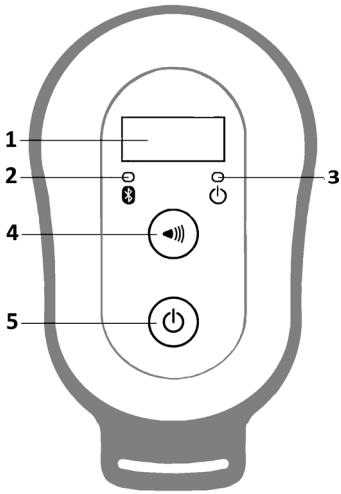
Figure 1. DLR-BT001-XX Front Panel

Front Panel Description

The front panel is illustrated in Figure 1. on page 3and its five main features are described in the table below:

Table 2- Front Panel LEDs and Buttons

N°	Name	Description
1	Display	LCD Alphanumeric Display (8 chars x 2 lines).
2	Link LED	Indicates the Bluetooth® and USB/charger connection (refer to Table 4 on page 5).
3	Power LED	Indicates the reader status and battery level (refer to Table 3 on page 5).
4	Trigger Button	In Inventory mode: press it shortly to perform a single inventory cycle (hold it down to repeat multiple inventory cycles). From initial ON state: press it within 2 seconds to enter the Main Menu Mode. In Menu mode: quick press it to scroll. Hold down for a few seconds to activate the option displayed.
5	Power Button	From OFF: Press it to switch the reader ON. From initial ON state: press it shortly to enter the second Aux Menu Mode (Format - Display Option settings). From ON: hold down for more than 2 seconds to switch the reader OFF[a]. In Menu modes: press to return to the Main Menu.

a. Only in DLR-SW or HID profiles.

Table 3- Reader Power LED Status Table

Status	Description
Green	Reader is active and the battery charge is in the range of 35÷100%.
Orange	Reader is active and the battery charge is in the range of 15÷35%
Red	Reader is active and the battery charge is in the range of 0÷15%

Table 4- Reader Bluetooth LED Status Table

Status	Description
OFF	No Connection established
Orange	USB Cable connected (either to a PC or to the AC adapter)
Blue	Bluetooth® connected

Acoustic and Vibration

Two events signaling resources complete the User Interface:

- Two tones Buzzer
- Vibrator.

Charging the Battery

The DLR-BT001-XX unit is supplied with a USB cable you can connect to a PC with a USB host port or to a 5 V power supply (with USB output).

When you put the reader in charge, the display lights up and shows the blinking charge indicator. A fixed indication "charge 100%" informs you when the charge is complete.

If the battery is completely low, the display may not turn on when the charger is connected. In this case, leave the reader connected to the charger for at least 5 minutes; then disconnect the USB cable and perform the reset procedure described in Resetting the DLR-BT001-XX Reader on page 32). Switch off the reader by pressing the power button and then connect the USB cable again.

USB Connector

A micro USB Type B socket connector is located in the bottom side of DLR-BT001-XX. It can be used to connect the reader to a USB host port or to a AC/DC battery charger.

Not Removable Battery

Due to its nature and dimensions, DLR-BT001 has a fixed rechargeable battery. It is strictly forbidden to remove it for charging or any other purpose. The charge will be performed using exclusively the micro USB connector.

Any attempt to access or replace the battery will cause an infringement of the warranty. In case of battery malfunction, please call Datalogic technical assistance.

Accessories

No. 1 B to A Type Micro USB cable

No. 1 Power supply

Figure 2. Set of Accessories (Delivered with DLR-BT001)

> **NOTE**
> An additional Power Supply unit named: "Multi Battery Charger" with Code MBC-DLRBT001is available, too (to be ordered separately). See Figure 3 below. For full details, refer to the MBC-DLRBT001 PRG, downloadable from the Datalogic Website.

Figure 3. Multi Charger Unit or Docking Station

Disposal of the Product

Do not dispose the product in municipal or household waste. Please check your local regulations for disposal/recycle of electronic products.

Technical Specifications

Item	Description
Physical Characteristics	
Reader Dimension	9.9 x 5.4 x 2.0 cm^3 / 3.9 x 2.1 x 0.8 in^3
Length of USB Cable	1.5 m / 4.9 ft
Weight	57 g / 2.0 oz
Electrical Characteristics	
Battery	Battery Type: Li-Ion 3.7V, 570 mAh
Battery Life	Operating: >12 hours with 40,000 tag readings; Standby: 15 days
Battery Charging Time	2 hours (typical)
Internal Buffer Size	64kByte (equiv. to 5300 ASCII EPC codes or 2650 HEX codes)
Reader - Tag Link	
Type	UHF - RFID
Antenna	Integrated linear (horizontal)
Standard Compliance	ISO 18000-6C/EPC C1G2
Frequency Range	865.60÷867.60 MHz - European standard 902.00÷928.00 MHz - US standard
RF Power	Programmable in 18 levels from 5 dBm e.r.p. (3 mW e.r.p.) to 22 dBm e.r.p. (150 mW e.r.p.)
Reading Range	Up to 90 cm / 35.4 in
Reader - Host Link	
Type	Bluetooth® (wireless) USB (corded)
Bluetooth®	Class 2 with output power 4dBm e.i.r.p. Bluetooth ver. 2.1 freq.2.4 Ghz.
USB	USB 2.0 Full Speed (12 Mbit/s) device port
Virtual COM Port	Baudrate: 115.200 kbps; Databits: 8; Stopbits: 1 Parity: none; Flow control: none

Item	Description
User Environment	
Particulate and Water Sealing	IP40
Operating Temperature	0° to 45°C / 32° to 113°F
Storage Temperature	-20° to 60°C / -4° to140°F

Reader-Tag Link Profiles

The DLR-BT001-XX readers support different modulations and return link profiles according to EPC Class1 Gen2 protocol V.2.0.

All profiles that have been tested for compliance with the European and US regulations are reported in the following table:

Table 5- DLR-BT001-XX Reader to Tag link profiles

P	Regulation	Modulation	Return Link
0	ETSI – FCC	PR–ASK; f=40kHz	FM0; f = 40kHz
1	ETSI – FCC	PR–ASK; f=40kHz	Miller (M=4); f = 256kHz
2	ETSI – FCC	PR–ASK; f=40kHz	Miller (M=4); f = 320kHz

Radiation Patterns

The radiation patterns of DLR_BT001-XX are shown in the following figures:
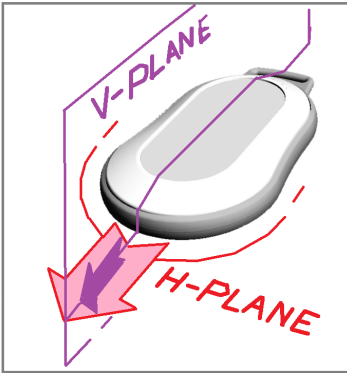
Model – EU (ETSI)
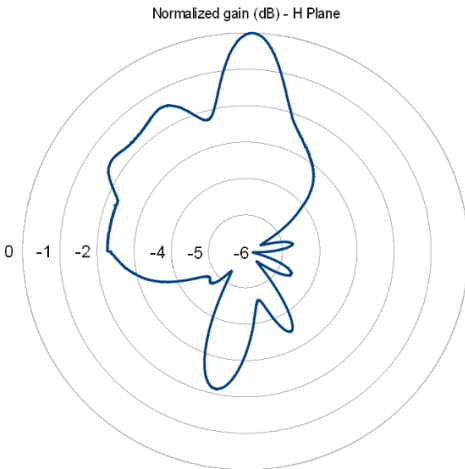
Figure 4. EU Radiation Pattern H Plane
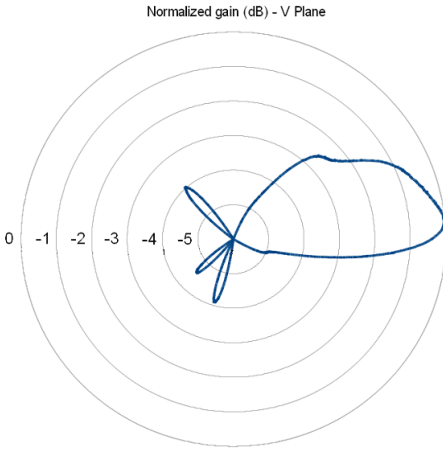
Figure 5. EU Radiation Pattern V Plane

Model – US (FCC)

Figure 6. US Radiation Pattern H Plane

Normalized gain (dB) - V Plane

Figure 7. US Radiation Pattern V Plane

Getting Started

The reader can be connected to almost all devices supporting the Bluetooth® HID profile (keyboard emulation): tablets, smartphones, Windows-PC, Android devices, iOS, etc.

To move the first steps and get familiar with the product you will need:

- n. 1 DLR-BT001-XX UHF RFID reader (XX = EU or US) with its own accessories (micro type B USB cable and supply unit).

- n. 1 set of labels (few low cost passive UHF Tag labels)

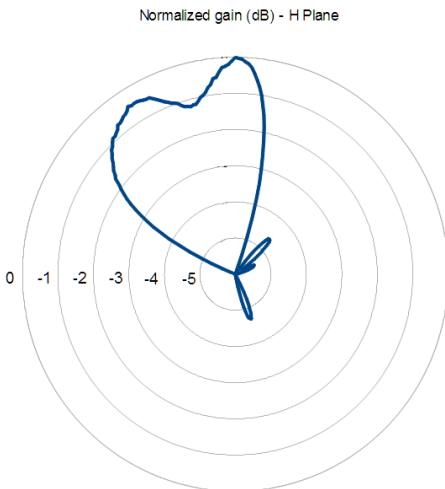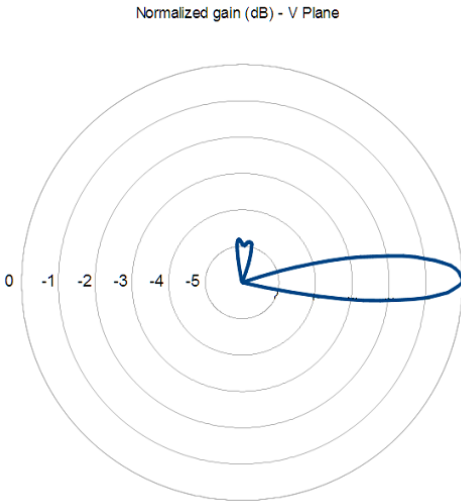- n. 1 DLR-TL001 Temperature Logger Tag: a"semi-passive" (battery-powered) unit communicating as a Tag but having some more complex features and data handling capabilities. **It is not strictly necessary for an elementary learning approach**. Read the NOTE below.

SW tools fully covering the needs for the matching reader's standard (ETSI/EU or FCC/US) and specific documentation (Quick Start Guide) can be found in the Datalogic website.

NOTE

The Temperature Logger Tag is a battery powered element able to sample alone the temperature history of the accompanying good/s. The data exchange with the reader is more complex. This kind of tag has a much wider memory, it is programmable (in particular its sampling time could be customized and optimized to get an "as low as possible power consumption"). The structure of the antenna circuit interface to the UHF RFID reader is the same as in the passive tags, working with the same link profile. A sample is given in Figure 8. on page 14

It is named "semi-passive" unit due to its merge of the passive antenna circuit interface and the low consumption active temperature processor.

Figure 8. Temperature Logger Tag - DLR-TL001

Introduction

The Product Reference Guide will help you to get started with your DLR-BT001-XX reader model.

The Reader has two communication interfaces: Bluetooth® and USB. Bluetooth® is the main interface and it uses the SPP profile (Serial Port Profile or HID), while the USB interface is mainly used for battery charging and firmware updating.

The reader has a default configuration that enables the Bluetooth® communication at power-on only with cable disconnected. The unit is ready to accept connection requests (discoverable) coming from most of the Bluetooth® enabled hosts.

At power on a DL–RFID logo is displayed for few seconds.

About communication protocol, the reader has three alternative profiles: DLR-SW, HID or BUFFER. They are selectable through a configuration menu.

The reader's configuration menu is widely described in DLR-BT001-XX Configuration of Main Menu & Aux Menu on page 33. The HID profile is the reader's factory default profile:

- HID: choose this option to select the keyboard emulation protocol. For details on the use of the HID profile please refer to Options List in the HID Profile on page 29.

- BUFFER: choose this option when host connection is not available. The EPC data will be stored into the reader's internal memory for a later download to the

host. When using BUFFER, please refer to chapter Using BUFFER Profile on page 31.

• This guide helps you to get started with your reader using the DLR-SW profile (over Bluetooth®, with SPP).

The following table lists the allowed 'Profiles – OpSys" choices for DLR-BT001-XX:

Table 6- Compatibility between Profiles and primary OpSys

<OS - PROFILE>	DLR-SW	HID	BUFFER
ANDROID (Tablet)	√	√	√
WINDOW (PC)	√	√	√
iOS (Ipad or Iphone)	-	√	-

The following description is the first detailed communication setup case that uses a typical condition.

Using DLR-SW Profile

1. Download the proper SW controller from the DL website: A DLR-SW RFID Software Tool Controller for Android Application can be found in the DLR-BT001-XX webpage by clicking on the **Android APP** on the **Google Play icon**.

2. Launch DLR-SW RFID Software Tool Controller for Android App. The following screen is displayed:
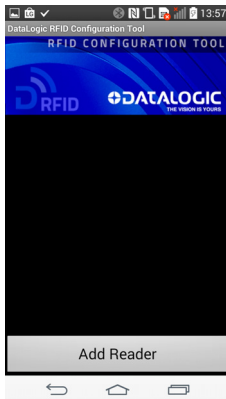
3. Click on 'Add Reader"; the next screen lists the
    allowed connection types:
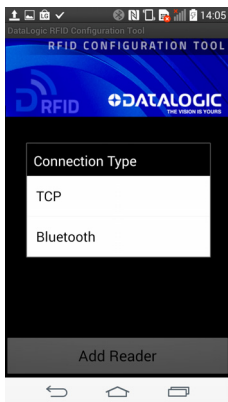
4. Click on 'Bluetooth" in the 'Connection Type" win-
    dow; the next screen asks for a confirmation:
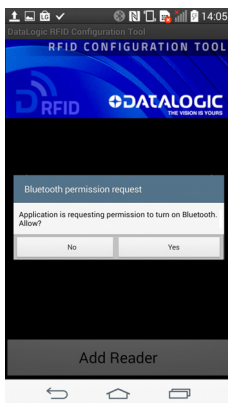
5. Click on 'yes" to accept the Bluetooth permission request; the next screen displays the sensed device(s)/reader(s):
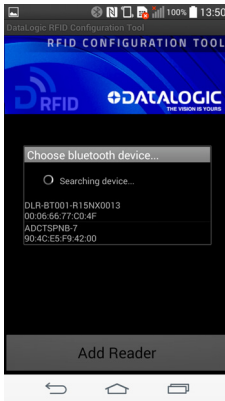
6. Select your DLR-BT001 reader from the list of Bluetooth® devices; the next screen asks for a passkey confirmation:
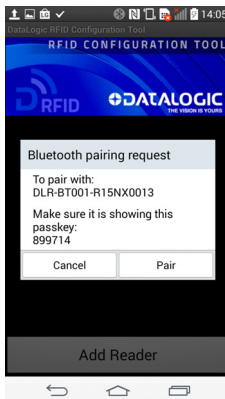
7. Confirm the passkey.
8. Once the connection is established, the Bluetooth® blue led turns on, the Bluetooth® link goes active and the screen displays the sensed reader's name DLR-BT001-XX. See the figure below:
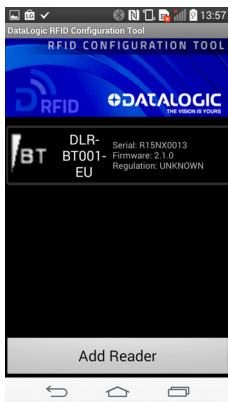
9. To start using your DLR-BT001-XX, click on the reader line; the following screen invites you to start a search/inventory cycle of the tags being reachable all around the reader.
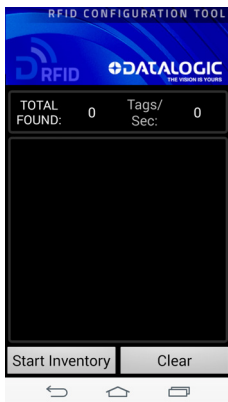
10. Click on 'Start Inventory"; A list of sensed tags is shown, as in the example below:
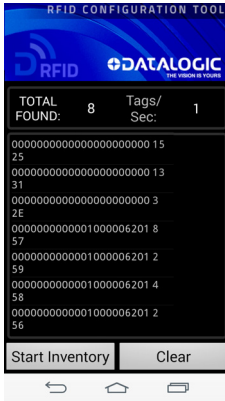
The listed sensed tags are normally located in a short to medium distance range (up to 50 cm from the reader).

The tags must be compatible with the reader's protocol specification. This is the case of the accompanying delivery tag samples.

Display Options in the DLR-SW Profile

To enter the Display profile options, turn on the reader; the display shows information on the currently active profile (DLR-SW) and then the message "ready" informs you that the reader is operating. Press quickly the power button to enter the DLR-SW Display profile option.

Hold down the trigger button to enter the Display Option:

- CONTROL: Hold down the trigger button to enter the CONTROL options:

    - LOCAL: the DLR-BT001-xx display shows the EPC of the read tags.

    - REMOTE: the display is controlled by a PC, a smartphone etc. using the function PrintScreen. So with this option you can customize the information displayed by the reader about the read tags (e.g., instead of the EPC you can display messages such as "correct tag").

        Use the function PrintScreen (for more information, visit the Datalogic RFID SDK Software

Development Kit web page and download the Datalogic RFID API Reference Manual) to customize the information displayed by the reader:

C# representation:

```
public void PrintScreen(
        string      Text,
        string      TerminalType
                )
```

Parameters:

Name	Description
Text	An arbitrary ASCII string.
TerminalType	RFU parameter, default is 0 (VT100).

The currently active CONTROL is marked with an asterisk.

To activate a different CONTROL, scroll the CONTROL options by pressing quickly the trigger button until LOCAL or REMOTE is displayed. Hold down the trigger button for a few seconds: the name of the chosen option will begin to flash. Once activated, the device returns to the main menu.

By default the CONTROL is set to LOCAL.

Reader-Host Communication Setup: Possible Cases

The previous Setup example is one of the possible alternatives, but others setup are possible.

The communication between the reader and the host varies depending on:

- The Profile
- The Operating System and the selected Host running it

The USB with VCP emulation can be used for the reader-host communication: VCP with USB is equivalent to SPP with Bluetooth®.

The most frequent setup alternatives are reported in the table below:

Table 7- DLR-BT001-XX – Communication Setups

CASE	INTERFACE	PROFILE	OPERATING SYSTEMS
1	BT (/SPP)	DLR-SW	ANDROID (Tablet, PDA, etc)
2	BT (/SPP)	DLR-SW	WINDOW (PCs with BT)
3	USB (/VCP)	DLR-SW	WINDOW (PCs with USB)
4	BT	HID (kb-emu)	ANDROID (Tablet, PDA, etc)
5	BT	HID (kb-emu)	WINDOW (PCs with BT)
6	BT	HID (kb-emu)	iOS (iDev with BT)

Case N° 1 BT – DLR-SW – ANDROID

This is the first setup example given before.

Case N° 2 BT – DLR-SW – WINDOW

In this example a Win 8 OS is intended to be running on a PC:

1. Right click on the Bluetooth icon in the taskbar > 'Add a Bluetooth Device":
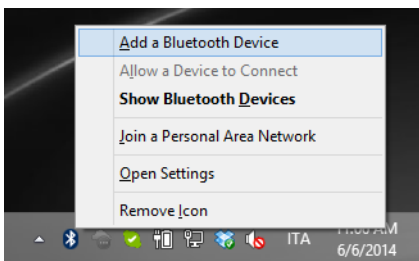
2. Select the DLR-BT001-XX reader and click on 'Pair":
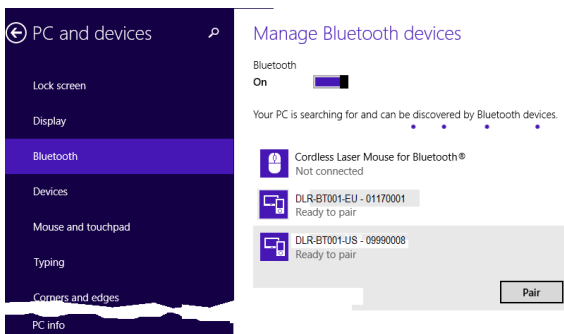
a passcode confirmation is asked:
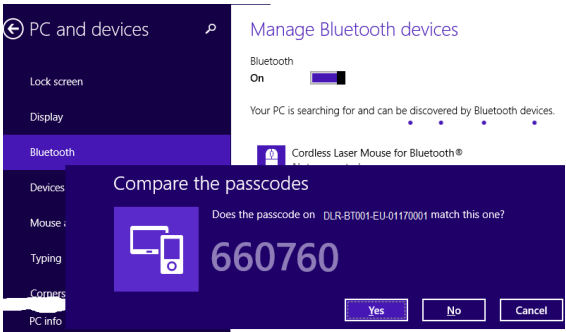
3. Click 'yes" to confirm the passcode.

In the case of a **Win XP OS**, when discovered by the host, your DLR-BT001-XX reader can be identified by its Bluetooth® device name, then paired using the pass-key; both parameters are provided here below:

- BT device name: 'DLR-BT001'+ device serial number
- Pass-key: 1234

4. Once the connection is up, the Bluetooth® blue LED turns on.

Now you can use the DL RFID Software Controller Application to control the reader. The application could be downloaded from the Datalogic website at the DLR-BT001-XX web page. Check the latest version of DL RFID Software Tool Controller for Windows software and install it. Refer to the manuals downloadable from the website to complete the needed steps.

Case N° 3 USB – DLR-SW – WINDOW

The reader can be connected to a PC using the provided USB cable and it could be detected by the PC as an emulated serial port (VCP). In order to correctly operate with the reader you need to install a driver on the PC. Let's refer to a Win 8 Operating System.

1. Power ON the reader and plug the USB cable into the DLR-BT001-XX USB port.

2. In order to connect your reader to the PC you need to install the VCP (Virtual Com Port) drivers for your specific operating system version. You can down-

load VCP drivers for Windows based systems from the Datalogic RFID Website, in the SW/FW section.

3. Open the System properties: go to 'Control Panel '> 'All Control Panel Items" > 'System" and click on the option 'Device Manager".
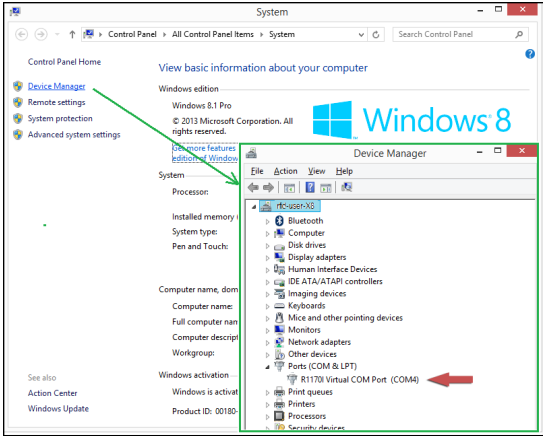
4. After installing the driver, the reader is detected by the PC (in the Device Manager window) as an emulated serial port (VCP).

Once the connection is up, the USB Yellow LED turns on.

Now you can use the DL RFID Software Tool Controller Application to control the reader under the **DLR-SW** profile. The application could be downloaded from the Datalogic website, at the DLR-BT001-XX web page. Check for the latest version of this application, download and install it. Refer to the manuals downloadable from the website to complete the needed steps.

Cases N° 2 & 3: DLR_SW for Windows - activation finish up

Both USB and Bluetooth® interfaces create a virtual COM port (**VCP /SPP)** on the host PC that can be used to connect to the reader by running a Windows type of the 'DL RFID Software Tool Controller" Application.

The activation of this version of DLR-SW profile is required to connect the DLR-BT001-XX in the case of Windows O.S.

Follow the steps below to connect the reader using DLR-SW Controller for Windows via Bluetooth® (or via USB connection):

1. Download from the DLR-BT001-XX web page the latest SW version of the DL RFID Software Tool Controller for Windows software and install it.

2. Connect the DLR-BT001-XX reader to the PC using either the Bluetooth® connection or the USB connection.

3. Right click on the Bluetooth® icon in the taskbar >Open Settings (as for USB, please refer to the 'System > Device Manager" path in the previous figure):
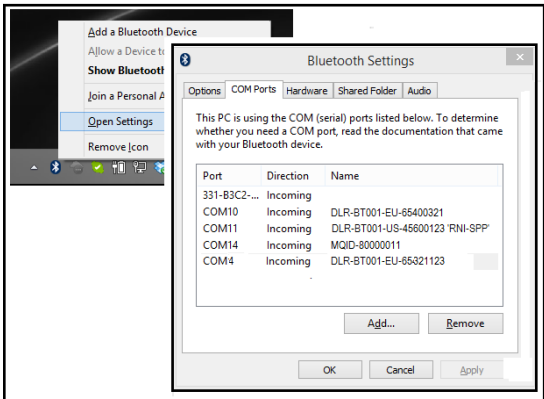
4. Look for the emulated serial COM port number in the 'Bluetooth Settings" (example: COM10) or, in case of USB, under the 'Device Manager" (example: COM4).

5. Launch the application you downloaded at point 1.

6. On the application main window, click on 'File" > 'Connect"; the connection dialog box will appear.

7. Select RS232 from the Connection Type combo box and the right COM <port number> from the RS232 Port combo box.

8. Click on 'Connect".

9. Now the application is ready to accept a command / click on 'Start Inventory" to display the information of the detected tags on the main window.

For more information on the DL RFID Software Tool Controller for Windows application usage, please refer to the relevant user manual: you can download it from the DLR-BT001-XX webpage, Documents Section, or in the web area named Manuals and Documents.

A DL RFID Software Tool Controller for Android application is also available. For more information please refer to the DL RFID Software Tool Controller for Android web page.

Case N° 4 BT – HID – ANDROID

This is the configuration case when using the HID (keyboard emulation protocol) Profile for a Bluetooth® link, while the host is an ANDROID operated machine.

1. On your Android device, go to the Setting Box and enable the Bluetooth®. A list of the Bluetooth® available devices is shown:
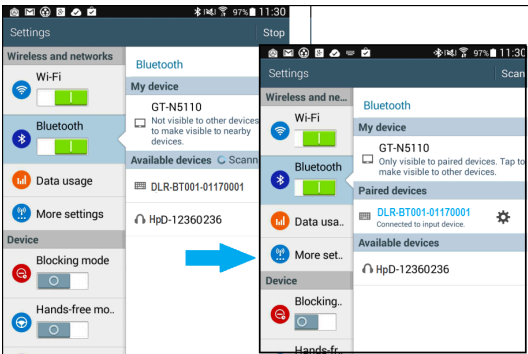
2. Click on the selected DLR-BT001-XX reader and complete the pairing/passkey-OK steps.

3. Once the connection goes up, the Bluetooth® blue LED turns on.

4. Launch a Text Edit App (or any other App with keyboard input).

5. Start an 'inventory cycle" by pressing the trigger button.

6. On the text editing App window you will see the EPCs of the tags:

New text.txt
300EFE2F94D0FB0000004683
300EFE2F94D0FB0000004683
123456781234123456781234
00000000000000000000253

NOTE

When configured in HID profile and paired to a device, the reader DLR-BT001-XX will automatically reconnect to the same device every time the Bluetooth® link is active (Reader switched ON and Bluetooth® activated on the host). This behavior can be verified looking at the blue LED that, in this case, automatically turns ON as soon as you switch on the reader.

Case N° 5 BT – HID – WINDOW

This is the configuration case when using the HID (keyboard emulation protocol) Profile for a Bluetooth® link, while the host is operating under WINDOWS OS. As a working example a WIN 8 version is considered.

The first 4 steps (up to 'blue LED turns on") are exactly the same as in the

4. Once Bluetooth® link is established, blue LED turns on.

5. Launch a text editing application (or any other application/ program accepting a keyboard input: Notepad is OK).

6. Start an 'inventory cycle" by pressing the reader's trigger button.

7. On the text editing window you will get the tag EPCs.
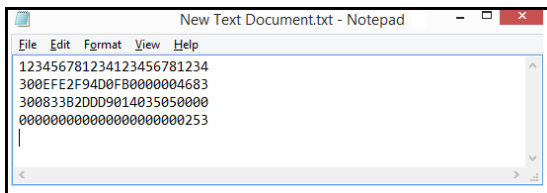
NOTE When configured in HID profile and paired to a device, the DLR-BT001-XX will automatically reconnect to the same device every time the Bluetooth® link is active (Reader switched ON and Bluetooth® activated on the host). This behavior can be verified looking at the blue LED. In this case, it automatically turns ON as soon as you switch on the reader.
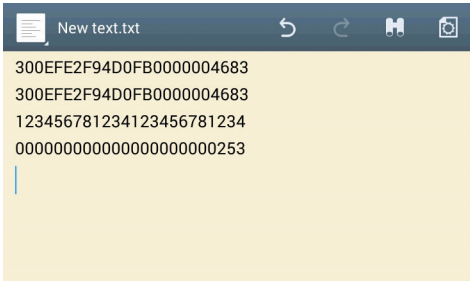
Case N° 6 BT – HID – iOS

This is the configuration case when using the HID (keyboard emulation protocol) Profile for a Bluetooth® link, and the host is an iOS operated machine.

1. On your iOS operated host go to Settings and enable the Bluetooth®.

2. A list of the Bluetooth available devices is shown.

3. Click on the DLR-BT001-XX reader in the list you want to link up. Perform pairing and passcode confirmation for it.

4. As soon as the connection is established the Bluetooth® blue LED turns on.

5. Launch a Text Editing App (or any other App accepting a keyboard input).

6. Start an inventory cycle by pressing the reader's trigger button.

7. On the text editing window you will find the EPCs of the detected tags:
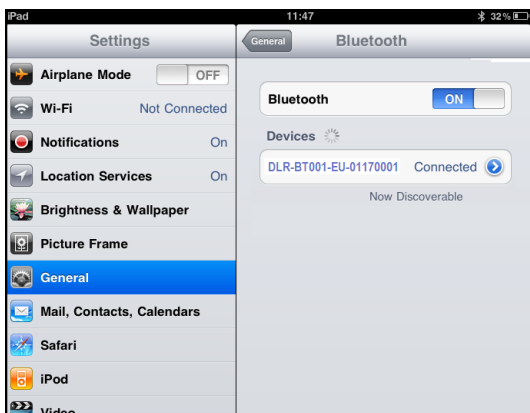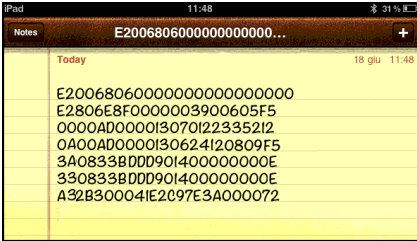

Options List in the HID Profile

To enter the HID profile options, turn on the reader, the display shows information on the currently active profile (HID) and then the message "ready" informs you that the reader is operating. Press quickly the power button to enter the HID profile options:

- FORMAT
- DISPLAY
- APPLEKB

FORMAT

In the HID profile you can set different EPC format, while by using the DLR_SW profile it is not possible to change the HEXADECIMAL EPC format.

- HEX: the RFID EPC string (96 bits long) is displayed as 24 hex characters (4 bits per character).
- ASCII: the RFID EPC string (96 bits long) is displayed by 12 ASCII characters.

The currently active format is marked with an asterisk. By default the EPC HID format is set to 'HEX".

To activate a different format, scroll the FORMAT options by pressing quickly the trigger button until HEX or ASCII is displayed. Hold down the trigger button for a few seconds,

the chosen option will begin to flash. Once activated, the device returns to the main menu.

DISPLAY

Hold down the trigger button to enter the Display Option:
1.   SCROLL: Flowing text on display. To enable/disable the display scroll, hold down the trigger button for a few seconds. The chosen option will begin to flash. Once activated, the device returns to the main menu.

The currently active state is marked with an asterisk. By default the display scroll is disabled and the display shows the last 8 characters of the tag EPC.

If the display scroll is enabled, the flowing text on the display shows the whole EPC of the tag.

APPLEKB

Hold down the trigger button to send a request to iOS device paired with the reader to open the virtual keyboard on the iOS device.

Using BUFFER Profile

The Buffer profile can be used when the communication links (USB or Bluetooth) are not available, for example in case of temporary missing of bluetooth communication. The operator can collects EPC codes, the reader store data into the internal buffer. When the BT link is up, or a USB cable is connected, the reader can send the buffered data if requested by the host.

For details on the activation method please refer to PROFILE on page 34.§

To perform the tag inventory, hold down the trigger button.

The display shows the number of read tags and information about memory used/total memory.

Example:

TAGS 018

02K/64K.

See DISPLAY on page 30§.

Now, the reader can be connected to the host through USB cable or bluetooth.

Please refer to case nr.1 or case nr.2 for instructions to connect bluetooth.

Please refer to case nr.3 for instructions to connect USB.

Download Data

When the reader is connected to the USB cable or Bluetooth to a PC or Android device, it is possible to download buffered data using proprietary DL SDK (refer to: "DL RFID API User Manual" and "DL RFID API Reference Manual").

Resetting the DLR-BT001-XX Reader

Remind the Reader's Front Panel at Figure 1. on page 3:
To reset the reader, press simultaneously power and trigger buttons for about six seconds, then release them.

The reader will restart and restore to the 'Default State".

WARNING

Note that the reader SHALL NOT be connected to the USB port or to the battery charger during this reset action, otherwise the reader enters in the "firmware upgrade state".

If, by mistake, you enter the "firmware upgrade state", disconnect the USB cable and repeat the reset procedure to restore the normal reader operation.

DLR-BT001-XX Configuration of Main Menu & Aux Menu

Introduction

To access the MAIN MENU, turn on the device (**power**) and hold down the **trigger** button within two seconds. To scroll the main menu, press quickly the **trigger** button.

The **DLR_BT001**'s configuration menu options are the following:

- PROFILE
- BEEP
- VIBRATE
- POWER
- CLOCK

To select a menu option, hold down the **trigger** button.

The complete structure of the DLR-BT001-XX reader's main menu is summarized in Figure 9. on page 34.

The menu and sub-menu items in the figure can be seen on the double lines Reader's Display during the Configuration Action / Cycle.
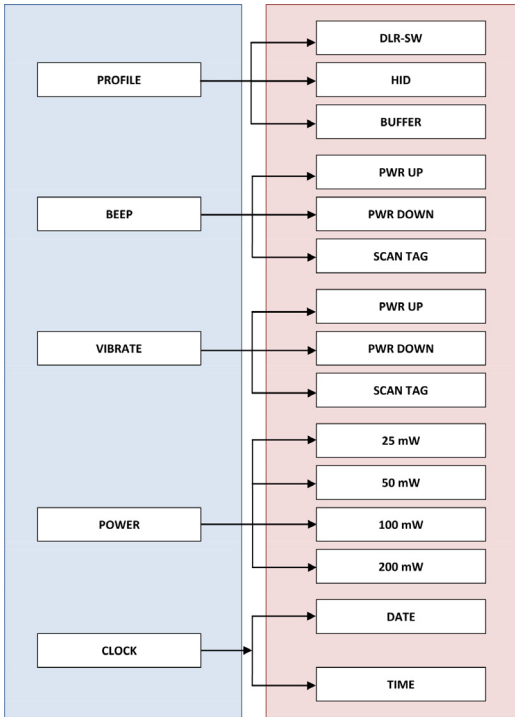
Figure 9. Reader's Configuration Menu Structure

PROFILE

The PROFILE menu is the first option of the main menu.

To select it, hold down the **trigger** button.

Press the **trigger** button quickly to scroll the PROFILE options. The currently active profile is marked with an asterisk.

The PROFILE submenu options are the following:

- **DLR-SW**: choose this option to select the DL RFID Software Tool communication protocol. Select this option to control the reader using the DL RFID Software Tool Controller Application or the SDK (Software Development Kits) library. For details on the use of the DLR-SW profile please refer to .

- **HID**: choose this option to select the keyboard emulation protocol. For details on the use of the HID profile please refer to Options List in the HID Profile on page 29.

- **BUFFER**: choose this option to select the stand-alone mode. The reader stores EPC codes into the internal memory when the communication links (Bluetooth® or USB) are not available.

  The DLR-SW and HID profiles require the presence of a nearby host that controls the reader (pc, tablet), while in the BUFFER profile the reader works in stand-alone mode.

To return to the main menu, press the **power** button quickly.

The currently active profile is marked with an **asterisk**. You can activate only one profile at a time.

To activate an alternative profile, scroll the PROFILE options by quickly pressing the **trigger** button, until the desired profile is displayed. Hold down the **trigger** button for a few seconds: the profile name will begin to flash.

Once activated, the device returns to the main menu.

When you turn on the reader, the display shows the currently active profile and then the message "ready" to inform you that the reader is able to operate.

Note that if the reader is in the HID profile you must disconnect it from any connected device before selecting another profile.

WARNING

BEEP

Access the configuration menu as explained in Introduction on page 33. Press the **trigger** button quickly to scroll the menu options.

The BEEP item is the second option of the menu. To select it, hold down the **trigger** button.

The BEEP submenu options are the following:

- **PWRUP**: beep at the power on of the reader
- **PWRDOWN**: beep at the power off of the reader
- **SCANTAG**: beep at the identification of a tag

To enable / disable the submenu options, scroll the BEEP options menu by pressing quickly the **trigger** button until the desired BEEP option is displayed and then hold down the **trigger** button for a few seconds.

Scroll the enable and disable options by pressing quickly the **trigger** button and hold down the **trigger** button for a few seconds to activate one of them. The enable (or the disable) option will begin to flash. Once activated, the device will return to the main menu.

The active state is marked with an **asterisk**. By default, all the BEEP options are disabled.

Note that you can enable or disable the beeper independently for any option so that the beeper can be active simultaneously on more than one option. To return to the main menu, quickly press **power** button.

VIBRATE

Access the configuration menu as explained in Introduction on page 33. Press the **trigger** button quickly to scroll the menu options.

The VIBRATE item is the third option of the menu. To select it, hold down the **trigger** button.

The VIBRATE sub-menu options are the following:

- **PWRUP**: vibration at the power on of the reader
- **PWRDOWN**: vibration at the power off of the reader
- **SCANTAG**: vibration at the identification of a tag

To enable / disable the submenu options, scroll the VIBRATE options menu by pressing quickly the **trigger** button until the desired VIBRATE option is displayed, then hold down the **trigger** button for a few seconds.

Scroll the enable and disable options by pressing quickly the **trigger** button and hold down the **trigger** button for a few seconds for the activation of one of them. The enable (or the disable) option will begin to flash. Once activated, the device returns to the main menu.

The currently active state is marked with an **asterisk**.

By default, all the VIBRATE options are disabled.

Note that you can enable or disable the vibration independently for any option so that the vibration can be active simultaneously on more than one option. To return to the main menu, press the **power** button quickly.

POWER

The POWER sub-menu allows to set the RF power level emitted by the reader.

Note that, when the reader is configured under the DLR-SW profile, the power could also be set by using the DL RFID Software Tool Controller Application or the '**Set-Power**" function of the library SDK (Software Development Kits).

Access the configuration menu as explained in Introduction on page 33. Press the **trigger** button quickly to scroll the menu options.

The POWER sub-menu is the fourth option of the menu. To select it, hold down the **trigger** button.

The POWER sub-menu options are the following:

- 25 mW
- 50 mW
- 100 mW
- 200 mW

Press the **trigger** button quickly to scroll the POWER options. To return to the main menu, press the **power** button quickly.

The currently active power is marked with an **asterisk**.

By default, the 200 mW power level is active.

You can activate only one power level at a time.

To activate a different power level, scroll the POWER options by pressing quickly the **trigger** button until the desired power level is displayed. Hold down the **trigger** button for a few seconds: the power level option will begin to flash. Once activated, the device returns to the main menu.

CLOCK

The reader does not consider date and time until the first setting by the user.

To access the CLOCK option, turn off the device and then turn it on again (power button).

To scroll the menu options, the trigger button press quickly (hold down the trigger button within two seconds to enter in the main menu).

The CLOCK menu is the last option of the menu. Hold down the trigger button to select it and enter its sub-menu.

The CLOCK submenu options are the following:

- **Date**: the date is the first option of the clock sub-menu. To set the date, hold down the trigger button for a few seconds. The date is shown in the format dd mm yy (e.g. 28 Oct 15). Press the trigger button quickly to change the day value. Then hold down the trigger button to save the day and move to the month value. Press quickly the trigger button to change the month value. Then hold down the trigger button to save the month and move to the year value. Press quickly the trigger button to change the year value. Then hold down the trigger button to save the year and hold down again to save the complete date. The date begins to flash and the reader returns to the main menu.

- **Time**: it is the second option of the clock submenu. Scroll the CLOCK options menu by pressing quickly the trigger button until the Time option is displayed and then hold down the trigger button for a few seconds to set the time. The time is displayed in the 24-hour format hh:mm (e.g. 14.32). Press the trigger button quickly to change the hh value. Then hold down the trigger button to save the hour value and pass to the minutes value. Press the trigger button quickly to change the 'mm" value. Then hold down the trigger button to save the minutes value and hold down again to save the complete time. The time begins to flash and the reader returns to the main menu.

To return to the main menu, press the power button quickly.

Firmware Upgrade

The DLR-BT001-XX firmware upgrade can be managed via **USB** by using the SW Upgrade Program.

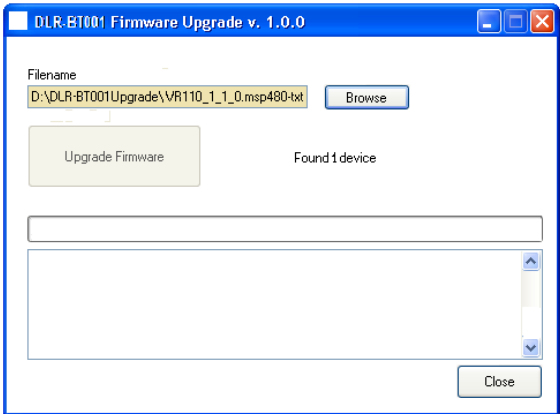The Upgrade Tool is available for free at the DLR-BT001-XX web page of the DL RFID Web Site, in the SW/FW section.

To upgrade the firmware, follow the steps below:

1. Connect the reader to the **USB** port of the PC.

2. Press simultaneously the **trigger** and the **power** buttons for about six seconds.

3. Open the FW upgrade program.

4. Click on 'Next": the next screen will appear:

5. In the window you will see the message 'Found 1 device" (if the message is 'No device connected" repeat the points 2, 3, 4 and 5).

6. Select the FW image file to be used. Click on 'Browse".

7. Click on 'Upgrade Firmware" and wait for the upgrade process to be completed.

8. At the end of the procedure, as the upgrade has been successfully performed, you will see the messages reported in the image below:
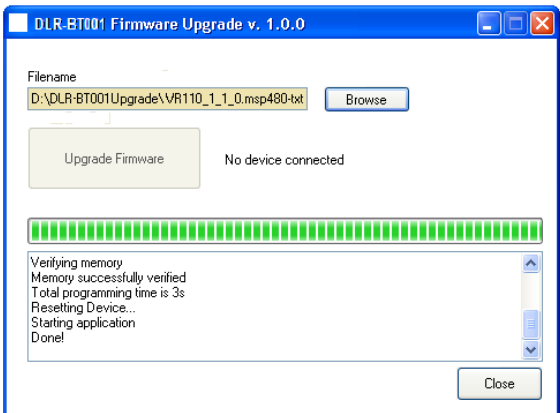
Now the module is ready for normal operation.

Datalogic Limited Factory Warranty

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(vii) the replacement of upper window/cartridge due to scratching, stains or other degradation and/or

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