TAGSYS RFID™
e-connecting goods

L-P101 Library USB Reader

User's Guide

Revision 1.0

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Publishing Information

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Read This First

Welcome to the TAGSYS range of products operating at the 13.56 MHz frequency. This range of products is used to implement high-quality RFID systems for demanding applications.

This document provides information about how to install and use Medium Range L-P101 Tag Readers.

Audience

This document requires familiarity with RFID technology. It is intended for people in charge of installing and using the product.

Conventions

Symbol	Meaning
CAUTION	**CAUTION**: A note that advises users that a specific action could result in the loss of data or damage the hardware. **WARNING**: A note that advises users that a specific action may result in physical harm.
	A note that provides additional information that helps the user perform a task or obtain the best performance from the product.

Abbreviations and Acronyms

AFI	Application Family Identifier
AON	All Or None
API	Application Programming Interface
ASK	Amplitude Shift Keying
CPU	Central Processing Unit
CRC	Cyclic Redundancy Check
DLL	Dynamic-Link Library
DPU	Digital Processing Unit
DSFID	Data Storage Format Identifier
DSP	Digital Signal Processor
EAS	Electronic Article Surveillance
ETX	End of Text
HPI	Host Port Interface
I/O	Input/Output
IFD	Interface Device

LED	Light Emitting Diode
LSB	Least Significant Bit
MSB	Most Significant Bit
OS	Operating System
PC	Personal Computer
PCB	Printed Circuit Board
RAM	Random Access Memory
RF	Radio Frequency
RFID	Radio Frequency IDentification
RFU	Reserved for Future Use
RPU	Radio Processing Unit
RTC	Real Time Clock
RTF	Reader Talks First
SAM	Security Access Module
STX	Start of Text
TTF	Tag Talks First
TTL	Transistor-Transistor Logic
TTY	TeleTYpe
UID	Unique Identifier

Glossary

Anti-Collision Tag capability making it readable while other tags are present in the RF field.

Antenna An aerial that receives and/or transmits radio frequency signals. Aerials are manufactured in a variety of forms, shapes and sizes.

Baud A unit of measure of data transmission speed representing the number of signal changes per second.

BNC Connector Cylindrical metal connector with a copper core that is located at the tip of a coaxial cable, and is used to connect cables together. It attaches by pushing and twisting the outer cylinder on to two locking pins.

Coupler See Reader.

Data Storage Format Identifier Identifies the structure of the data stored in the tag.

Digital Signal Processor This part of the Radio Processing Unit (RPU) performs real-time tag decoding and manages the Medio L200 configuration.

Dynamic-Link Library Executable routines that are stored as separate files with DLL extensions and executed only when needed by the program.

Host Port Interface Interface used to access the DSP memory.

IEC Connector Three-pin connector used on sockets that carry mains electricity to the computer. All PCs use a male IEC connector and mains lead with a female IEC connector.

Interrogation Pulse A signal transmitted by the coupler to activate the tag's transponder.

Monitoring Port Parallel Port granting access to the HPI. It communicates directly with the Radio Processing Unit

Multi-Read See Anti-Collision

Nibble Half a byte (4 bits)

Packaged Reader A reader in its casing.

Phase Shift Difference of phase between the 13.56 MHz field emitted by two antennas. This feature is dedicated to rotating field applications and three-dimensional volume tag detection.

Protocol A set of rules governing a particular function, such as the flow of data/information in a communication system (communication between a tag and a reader or a reader and a PC or host computer).

Radio Frequency Identification System (RFID) An automatic identification and data capture system comprising one or more readers and one or more tags in which data transfer is achieved by means of suitable modulated inductive or radiating electromagnetic carriers.

Radio Processing Unit This unit controls the main features of the Medio L200, such as the RF channels, the multiplexer and the tag decoding.

Reader Electronic system for the communication between tags and host computers.

Reader Talks First Chip protocol for exchanges between the reader and the chip, whereby the chip waits for a command from the reader to which it responds.

RS-232 Electronic Industries Association (EIA) standard for serial interfaces between computers and peripherals which defines the function, the electrical characteristics and the timing of signals.

RS-485 Electronic Industries Association (EIA) standard for multipoint, differential data transmission. It allows multiple nodes to communicate bi-directionally over 1 or 2 twisted pairs.

Smart Label See Tag

Tag Small, flexible label from the 13.56 MHz TAGSYS product line. A tag is made of a chip connected to an etched antenna.

Tag Talks First Chip protocol for exchanges between the reader and the chip, whereby the tag sends information continuously, without waiting for a specific command from the reader.

Transceiver A combined transmitter and receiver.

Transponder A combined receiver/transmitter that automatically transmits a signal when a 'trigger' is received by it. The trigger is often a pulse, called an interrogation pulse.

If you need assistance

Please contact your nearest TAGSYS sales representative or the TAGSYS welcome desk at:

Telephone: +33 (0)4 91 27 57 00
Fax: +33 (0)4 91 27 57 01
E-Mail: info@tagsys.net
Website: http://www.tagsysrfid.com/

Contact for Comments

We welcome your feedback to help us provide high quality documentation.

For technical comments, please contact our welcome desk:

Telephone: +33 (0)4 91 27 57 00
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E-Mail: info@tagsys.net

Please remember to quote the Document Reference Number DOC11754A0, your job title and your company.

Quality Issues

TAGSYS implements stringent quality controls at all stages of its manufacturing process. However, should you find a defect with this product, please notify your TagSys Quality Service representative using the dedicated Product Return Form.

Telephone: +33 (0)4 91 27 57 36
Fax: +33 (0)4 91 27 57 02

Table of Contents

1 For Your Safety

1.1 General Use

The L-P101 is designed to be reliable and to provide years of trouble-free service. Please observe the following general tips:

- Take care not to scratch the device. Keep the device clean. When working with the device, use only TAGSYS-approved accessories.

- This device is not waterproof and should not be exposed to rain or moisture. Under extreme conditions, water may enter the circuitry.

- Protect the device from extreme temperatures. For example, do not place the device in a windowed area where the sun may cause extreme temperatures, and keep it away from heaters and other heat sources.

- Do not store or use the device in any location that is extremely dusty, damp, or wet.

- Use a soft, damp cloth to clean the device. If the surface of the device becomes soiled, clean it with a soft cloth moistened with a diluted window-cleaning solution.

1.2 Care and Maintenance

This device is a product of superior design and should be handled with care. The suggestions below will further increase the lifetime of this device.

- Keep the device and all parts and accessories out of the reach of small children.

- Keep the device dry. Precipitation, humidity and liquids contain minerals that will corrode electronic circuits.

- Do not use or store the device in dusty, dirty areas. Its moving parts can be damaged.

- Do not store in hot areas. High temperatures can shorten the life of electronic devices, damage batteries and warp or melt certain plastics.

- Do not store in cold areas. When the device warms up (to its normal temperature), moisture can form inside the device, which may damage electronic circuit boards.

- Do not attempt to open the device. Non-professional handling of the device may damage it.

- Handle the device with care. Shocks may break internal circuit boards.

- Do not clean the device with harsh chemicals, cleaning solvents or strong detergents. Gently wipe the device with a soft cloth slightly dampened in a mild soap-and-water solution.

- Do not paint the device. Paint may clog the device's moving parts and prevent proper operation. Paint with metallic contents may limit device performances.

- If the device or any accessory are not working properly, take it to your nearest qualified TAGSYS representative.

1.3 Important Safety Information

1.3.1 Operating Environment

When connecting the device or any accessory to another device, read its user's guide for detailed safety instructions. Do not connect incompatible products.

As with all RF equipment, users are advised that the equipment should only be used in its normal operating position.

2 Certification

2.1 Occupational Health

TAGSYS L-P101 Reader has been designed and tested to be in conformity with the European Standard EN 50364 "Limitation of human exposure to electromagnetic fields from devices used in Electronic Article Surveillance (EAS), Radio Frequency Identification (RFID) and similar applications" in conjunction with the European Standard EN 50357 describing how to evaluate the exposure level.

2.2 Regulatory Notices

An RFID system typically composed of an RF emission device such as the L-P101 connected to an antenna is subject to national regulations that may differ by country.

One important item to consider is the maximum permissible magnetic field intensity at a distance of 10 meters from the antenna that must not exceed 42 dBµA/m in Europe and 38 dBµA/m in US.

The L-P101 meets these limits.

2.2.1 In Europe (CE and RTTE Directives)

The L-P101 complies (CE Declaration of Conformity granted) with the European EMC directive.

The L-P101 complies with the requirements of the Telecommunication Terminal Equipment Act (FTEG) and the RTTE Directive 1995/5/EC.

It is the responsibility of the TAGSYS Reseller to install the L-P101 as described in this User's Guide or TAGSYS Documentation.

Any modification of the L-P101 is prohibited without the written consent of TAGSYS. Unauthorized modifications may void the conformity of the equipment to CE and RTTE Directives and will void the TAGSYS warranty.

CAUTION:

It is the responsibility of the CIT (Certified Integrators by TAGSYS) to install the L-P101 as described in this Reference Guide or in TAGSYS Documentation.

If a L-P101 is further integrated in a different product, it is the responsibility of the manufacturer of this complementary product to obtain the required approvals for this product.

2.2.2   In USA (FCC Directive)

<div style="border:1px solid black">

L-P101

WARNING TO USERS IN THE UNITED STATES

FEDERAL COMMUNICATIONS COMMISSION (FCC) RADIO

INTERFERENCE STATEMENT 47 CFR Section 15.105(b)

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 one 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 to that to which the receiver is connected.

▪	Consult the dealer or an experienced radio/TV technician for help.

NO UNAUTHORIZED MODIFICATIONS

47 CFR Section 15.21

CAUTION: This equipment may not be modified, altered, or changed in any way without signed written permission from TAGSYS SA. Unauthorized modification may void the equipment authorization from the FCC and will void the TAGSYS warranty.

ANTENNA REQUIREMENT

47 CFR Section 15.203

CAUTION: This equipment must be professionally installed. The installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded. Non-professional installation or installation of the equipment with an improper antenna may void the equipment authorization from the FCC and will void the TAGSYS warranty.

</div>

The L-P101 has been designed to comply with Part 15 of the FCC Rules.

Operation is subject to the following two conditions: (1) The system devices may not cause harmful interference, and (2) The library system devices must accept any interference received, including interference that may cause undesired operation.

2.2.3 In Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations

3 Introduction

3.1 Product Description

The L-P101 is a Medium Range 13.56 MHz RFID reader especially designed for Library applications. The L-P101 has been designed to be used in combination with Aero LI, L-SA2 and L-SA3 antennas. The L-P101 can decode Folio 20, Folio 320 and Folio 370 Library Tags.

Due to its small size, the L-P101 can be used either in desktop configuration or easily integrated in self check stations.

The L-P101 Tag readers are easy to integrate because of its:

- small size
- USB 1.1 communication link

3.2 L-P101 Key Features

Table 1: L-P101 Key Features

Description	L-P101
Operating Frequency	13.56 MHz
Compatibility	TAGSYS C220, C320 and ISO-15693 chips
Serial Link	USB 1.1
Network Operating	Yes
Firmware upgradeable	Yes

3.3 Delivery

The L-P101 Tag Reader kit contains the following items:

Table 2: Package Contents

Quantity	Item
1	L-P101 Tag Reader
1	SMA/BNC adaptor
1	Set of rubber feet
1	USB cable
1	12 V power supply

1	CD-ROM including:
	- L-P101 User's Guide - USB drivers - User-friendly Px Explorer software provided for test and debug operations on Windows® 9x, NT®, 2000 and XP platforms - Tagsys Library Software Development Kit including - DLLs and ActiveX - Library Software Development Kit Documentation - One set of source code and executable samples
1	Welcome Letter / Product Return Form

4   Installing the Reader

This section explains how best to install the L-P101 Mid Range Reader.

4.1 Reader Connections

4.1.1   Front Panel

Figure 1 below chows the front panel, which is dedicated to the RF connection. Any of the following antennas can be connected to the standard SMA connector:

- Aero LI
- L-SA2
- L-SA3

Figure 1: Front panel

The red LED turns on when the reader is supplied.

4.1.2   Rear Panel

The USB serial communication link and the power supply connector are located on the rear panel as shown below.

Figure 2: Rear panel

4.2 Installing the USB Drivers

At first connection to the PC USB port, Windows® will detect the L-P101 reader and will ask you for drivers installation. USB drivers are located into the USB Drivers folder on the product CD-Rom.

Two drivers must be installed:

- The first driver type is the direct driver, which provides direct access to USB device via a dynamic link library (DLL).

- The second driver type is the virtual COM port (VCP) driver. The VCP driver emulates a standard PC COM port.

4.2.1 Window 98® USB Drivers Installation

Power up and connect your L-P101 to a spare USB port on your PC. This should bring up a "Building Driver Information Database" followed by the Windows Add New Hardware Wizard.

Click "Next" to proceed with the installation

- Select "Search for the best driver for your device" and then click "Next"

- Select "Specify a location" and click the Browse button to select the USB Drivers folder on the Product CR-Rom. Once the files have been located, click "Next" to proceed with the installation

- Click "Next" to install the device

- Windows® should then display a message indicating that the installation was successful. Click "Finish" to complete the installation.

To confirm that the installation has completed successfully, open the Device Manager and select "View devices by type". The TAGSYSL-P101 appears as a USB device connected to a USB port

The next step is to install the VCP drivers.

Power up and connect your L-P101 to a spare USB port on your PC. This should bring up a "Building Driver Information Database" followed by the Windows Add New Hardware Wizard.

- Select "Search for the best driver for your device" and then click "Next"

- Select "Specify a location" and click the Browse button to select the USB Drivers folder on the Product CR-Rom. Once the files have been located, click "Next" to proceed with the installation

- Click "Next" to install the device

- Windows® should then display a message that the installation of the serial converter driver was successful. The COM port emulation driver must now be installed. Click "Finish" to complete the installation.

To confirm that the installation has completed successfully, open the Device Manager and select "View > devices by type". The TAGSYS L-P101 appears as an additional COM port.

4.2.2 Windows XP USB Drivers Installation

Power up and connect your L-P101 to a spare USB port on your PC. This will launch the Windows Found New hardware Wizard

- Select "No, not this time" and click next to proceed with the installation

- Select "Install from a list or specific location (Advanced)" and then click "Next"

- Select "Search for the best driver in these locations" and click the Browse button to select the USB Drivers folder on the Product CR-Rom. Then click "Next" to proceed.

- Windows should then display a message indicating that the installation was successful. Click Finish to complete the installation

To confirm that the installation has completed successfully, open the Device Manager and select "View > Devices by type". The TAGSYS L-P101 appears as a USB device connected to a USB port.

The next step is to install the VCP drivers.

Power up and connect your L-P101 to a spare USB port on your PC. This will launch the Windows Found New Hardware Wizard

- Select "No, not this time" and click next to proceed with the installation

- Select "Install from a list or specific location (Advanced)" and then click "Next"

- Select "Search for the best driver in these locations" and click the Browse button to select the USB Drivers folder on the Product CR-Rom. Then click "Next" to proceed.

- Windows should then display a message indicating that the installation was successful. Click Finish to complete the installation. This has installed the serial converter. The COM port emulation driver must be installed after this has completed.

- After clicking "Finish", the Found New Hardware Wizard will continue by installing the COM port emulation driver.

To confirm that the installation has completed successfully, open the Device Manager and select "View > Devices by type". The TAGSYS L-P101 appears as an additional COM port.

5   Px Explorer

The L-P101 reader is delivered with the Px Explorer software tool intended to easily setup the reader, test it and perform reading and writing operations according to the antenna and type of tag to be used. In addition, Px Explorer can display additional information such as the Product Reference and Firmware version and revision. This section describes how to start with Px Explorer.

5.1 Installing Px Explorer

To install Px Explorer software, insert the product CD-ROM into the disk drive on your PC and run the Setup from the Software\Px Explorer folder and click "Next"
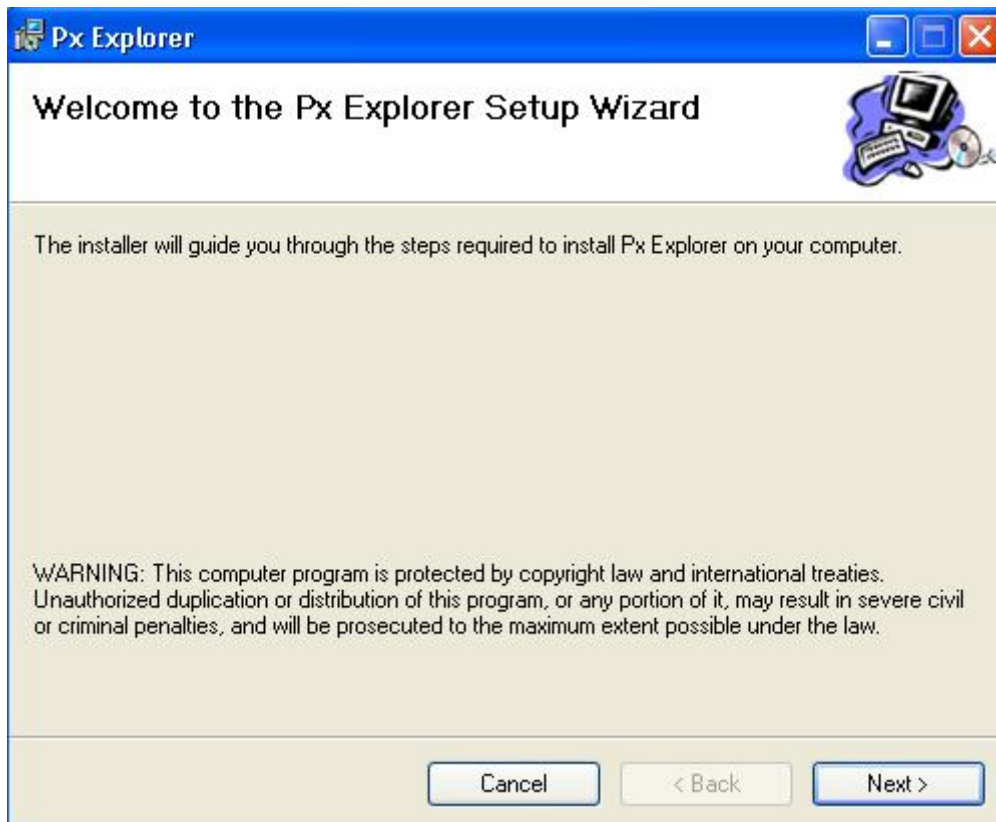
Click the "Browse" button if you want to choose a specific installation folder.
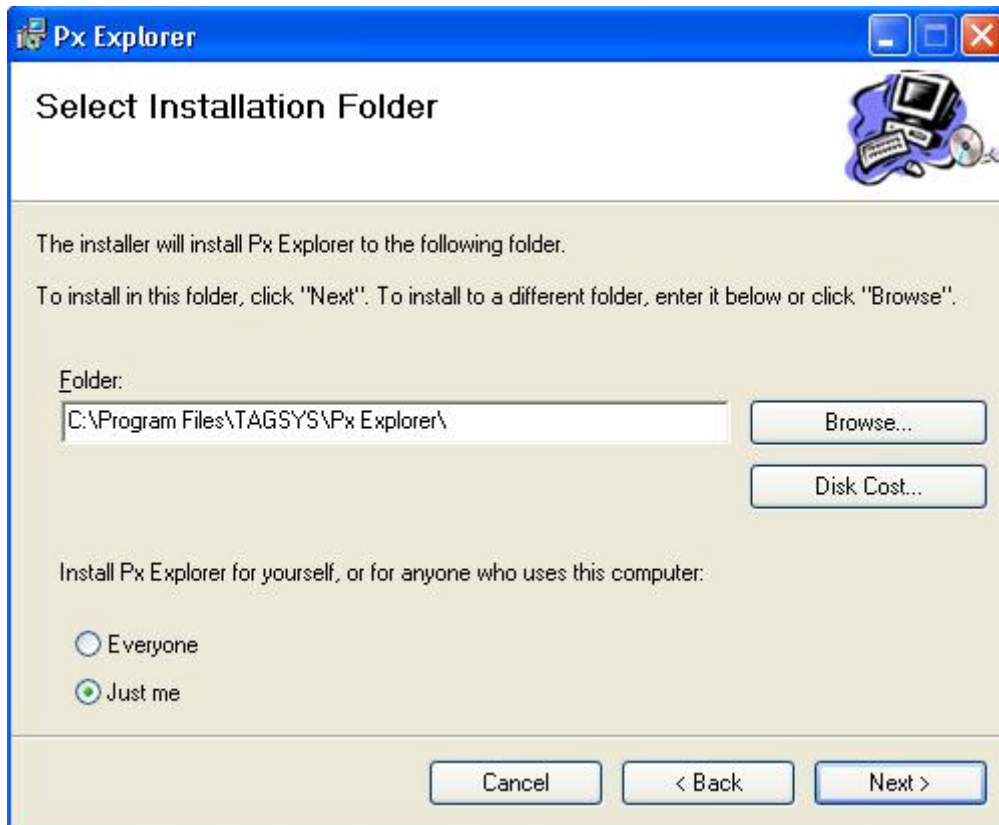
Once the correct folder is selected, click "Next"

Click "Next" to start the installation process. A shortcut will be created on your desktop and a program group will be created in the start menu.

5.2 Running Px Explorer

Before launching Px Explorer be sure which COM port number is assigned to the TAGSYS L-P101 reader. Open the Device Manager and select "View > Devices by type".

The COM port number assigned to the L-P101.

Power up the L-P101 and connect the USB cable to both your PC and the L-P101. Run Px Explorer. If the following window is displayed click yes.

Open the Communication Settings window (CTRL+C) and check the COM port number and the communication speed. The default communication speed for the L-P101 is 115200 Bauds.
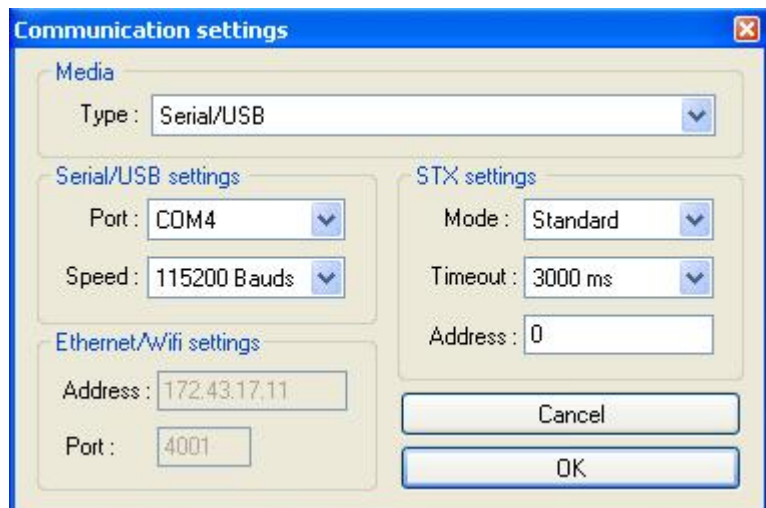
Click OK. Now Px Explorer is ready to communicate with your L-P101

5.3 Reading and Writing a Tag

Px Explorer includes a Wizard function used to guide you each step of how to read or program a tag. We recommend using the Wizard function for users who are not familiar with all Px Explorer capabilities and features.

Click on the Wizard icon (magic wand) to open the Px Explorer Wizard dialog box.

Select the type of chip from the drop–down menu or place the tag on the antenna and click the "Detect " button to automatically detect the tag type.

Select the desired operation (Read or Write) and then click OK. All the necessary windows to perform the desired action will be automatically displayed on the screen.

For more details concerning Px Explorer select the info menu and click Help (CTRL+H) to display the Px Explorer User's Guide

6 Technical Specifications

Table 3: L-P101 Technical Specifications

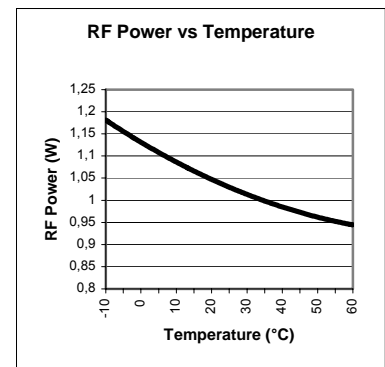| Reference	L-P101
Size (L x W x H)	103 x 60 x 18 mm
Weight	66 g
DC power	12 VDC Typical
Chip compatibility	C220 (Folio 20) C320 (Folio 320) ISO 15693 (Folio 370)
Communication interface	USB 1.1
RF Output Power	1W Typical
Power consumption	3,6 W
Operating temperature	0° to +55°C
Storage temperature	-20° to +70°C
Conformity	ETSI 300-330 European Radio compliance EN 50364 FCC part 15
Communication protocol	TAGSYS-specific STXE-2

7 Electrical Characteristics

This chapter provides information about AC and DC characteristics for all pins. It also gives timing characteristics for the different interfaces.

7.1 Absolute Maximum Ratings

Parameter	Value
Ambient Operating Temperature	0°C to +55°C
Storage Temperature	-20°C to +70°C
Supply Voltage with respect to GND	25 V
Total Power Dissipation	3.6 W
Total Power Dissipation on Antenna	1 W

7.2 DC Characteristics

Value	Description		Max.	Typ.	Min.	Unit
V_{Supply}	Supply Voltage		13.2	12	10.8	V
I_{RFOff}	Supply Current – RFOff – USB Plugged (V_{Supply} = 12V)		44	39	35	mA
I_{RFOn}	Supply Current (RFOn, Dummy Load 50Ohm, V_{Supply} = 12V)		304	290	275	mA
I_{RFOn}	Supply Current ($RFOn$, V_{Supply} = 12V, Antenna connected)	AERO LI		271		mA
		LSA-2		290		mA
		LSA-3		276		mA
I_{Open}	Supply Current (RFOn, No connection on RF Connector)			202		MA
T_{Op}	Operating Tempature		0		55	°C
V_{USB}	Supply Voltage on USB cable		5.25	5	4.35	V
I_{Usb}	Supply Current on USB cable		25	20	-	mA
U_{VOH}	D+/D- Static Output high		3.6		2.8	V
U_{VOL}	D+/D- Static Output low		0.3		0	V
U_{VSE}	Single Ended Rx Threshold		2.0		0.8	V
U_{VCOM}	Differential Common Mode		2.5		0.8	V
U_{VDIF}	Differential Input sensitivity				0.2	V
Z_{DRV}	Driver Output impedance		44		29	Ohm

Current Supply vs Temperature RF On (V Supply = 12V)

Current Supply vs Temperature RF Off (V Supply = 12V)

RF Power vs Temperature
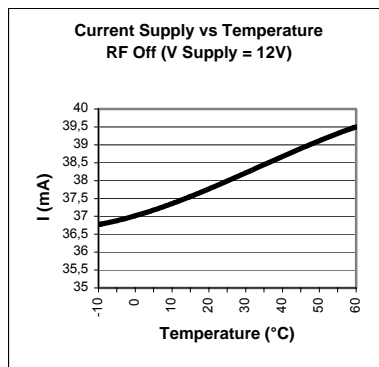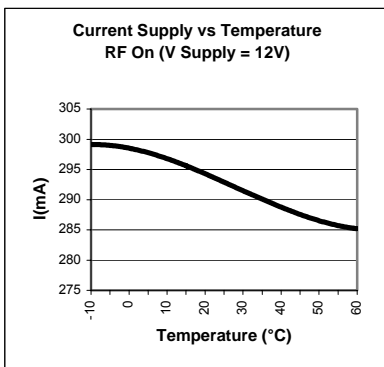
8   Warranty Conditions

8.1 Warranty

TAGSYS warrants that this Product shall comply with the functional specifications set forth herein for a period of one year from the date of delivery to the Buyer.

This warranty is valid for the original Buyer of the Product and is not assignable or transferable to any other party.

TAGSYS cannot be responsible in any way for, and disclaims any liability in connection with the operation or performance of:

- any product in which the Product is incorporated;

- any equipment not supplied by TAGSYS which is attached to or used in connection with the Product; or

- the Product with any equipment

This warranty does only cover the Product to the exclusion of any such other equipment.

Optimal operation and performance of the Product are obtained by using TAGSYS' readers, by applying TAGSYS installation guidelines and by having your installation reviewed by a TAGSYS' technical consultant.

TAGSYS warranty does not cover the installation, maintenance or service of the Product and is strictly limited to the replacement of Products considered as defective by TAGSYS and returned according to the return procedure defined below; in such case, TAGSYS will, at TAGSYS' option, either replace every defective Product by one new Product or refund the purchase price paid by Buyer to TAGSYS for the defective Product.

8.2 Warranty Exclusions

- Defects or damages resulting from storage of the Product under conditions which do not comply with TAGSYS specifications or normal usage

- Defects or damages resulting from use of the Product in abnormal conditions (abnormal conditions being defined as any conditions exceeding the ones stated in the product specifications).

- Defects or damages from misuse, accident or neglect.

- Defects from improper testing, operation, maintenance or installation.

- Defects from alteration, modification except modifications or adjustments specifically described in this Product reference guide, adjustment or repair, or any attempt to do any of the foregoing, by anyone other than TAGSYS.

- Any action on Product that prevents TAGSYS from performing an inspection and test of the Product in case of a warranty claim.

- Tampering with or abuse of the Product.

- Any use or incorporation by the Buyer or a third party of TAGSYS' Product into life saving or life support devices or systems, or any related products, TAGSYS expressly excludes any liability for such use.

8.2.1 General Provisions

This warranty sets forth the full extent of TAGSYS responsibility regarding the Product.

In any event, TAGSYS warranty is strictly limited to (at TAGSYS' sole option) the replacement or refund of the Products purchase price to TAGSYS, of Products considered as defective by TAGSYS.

The remedy provided above is in lieu and to the exclusion of all other remedies, obligations or liabilities on the part of TAGSYS for damages, whether in contract, tort or otherwise, and including but not limited to, damages for any defects in the Products or for any injury, damage, or loss resulting from such defects or from any work done in connection therewith or for consequential loss, whether based upon lost goodwill, lost resale profits, impairment of other goods or arising from claims by third parties or otherwise.

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8.2.2 How to Return Defective Products

The Buyer shall notify TAGSYS of the defects within 15 working days after the defects are discovered.

Defective Products must be returned to TAGSYS after assignment by a TAGSYS Quality Department representative of an RMA (Return Material Authorization) number. No Products shall be returned without their proof of purchase and without the acceptance number relating to the return procedure.

All Products shall be returned with a report from the Buyer stating the complete details of the alleged defect.

Call +33 4 91 27 57 36 for return authorization and shipping address.

If returned Products prove to be non-defective, a charge will be applied to cover TAGSYS' analysis cost and shipping costs.

If the warranty does not apply for returned Products (due to age, or application of a warranty exclusion clause), a quote for replacement will be issued, and no replacement will be granted until a valid purchase order is received. If no purchase order is received within 30 days after the date of TAGSYS quote, TAGSYS will return the products and charge the analysis cost and shipping costs.

All replaced Products shall become the property of TAGSYS.

The Product Return Form is included on the following page. This form should accompany any product you need to return to TAGSYS for analysis in the event of a problem.

TAGSYS RFID™
e-connecting goods

Product Return Form

Customer Profile:

Company: ....
Address:...
....
....
City & State:...
Zip Code: ....
Country: ....

Contact Name: ....
Contact e-mail: ....
Contact Phone: ....
Contact Fax:...

Order identification:

Product Name:...
Order Number (OEF):...

Invoice Number: ....
Return Quantity: ....

Order identification:

Product Name:...
Order Number (OEF):...

Reason for return:

....
....
....
....
....

To inform TAGSYS of this return, please email it to
RMA@tagsys.net
Address to ship the product with this document attached:
TAGSYS
QUALITY DEPARTMENT
180, chemin de Saint Lambert
13821 La Penne sur Huveaune France

To inform TAGSYS of this return, please also fax it to your Customer Service Representative
+33 4-9127-5701

Return Procedure
The product returned will go through stringent quality controls.
A final analysis report will be sent to you as soon as possible.
Please contact your Quality Service representative for further details at
+33 (0) 4 91 27 57 36