TECHNOLOGY SOLUTIONS UK LTD

USER GUIDE:
2173 WEARABLE *BLUETOOTH*® HF/LF RFID READER

www.tsl.com

Design • Development • Manufacture

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INTRODUCTION

Technology Solutions' 2173 HF/LF Reader provides High Frequency (HF) and Low Frequency (LF) Radio Frequency Identification (RFID), with optional barcode scanning functionality. The unit can be used stand alone or paired with a *Bluetooth®* wireless technology enabled host device.

PARTS OF THE 2173 HF/LF READER

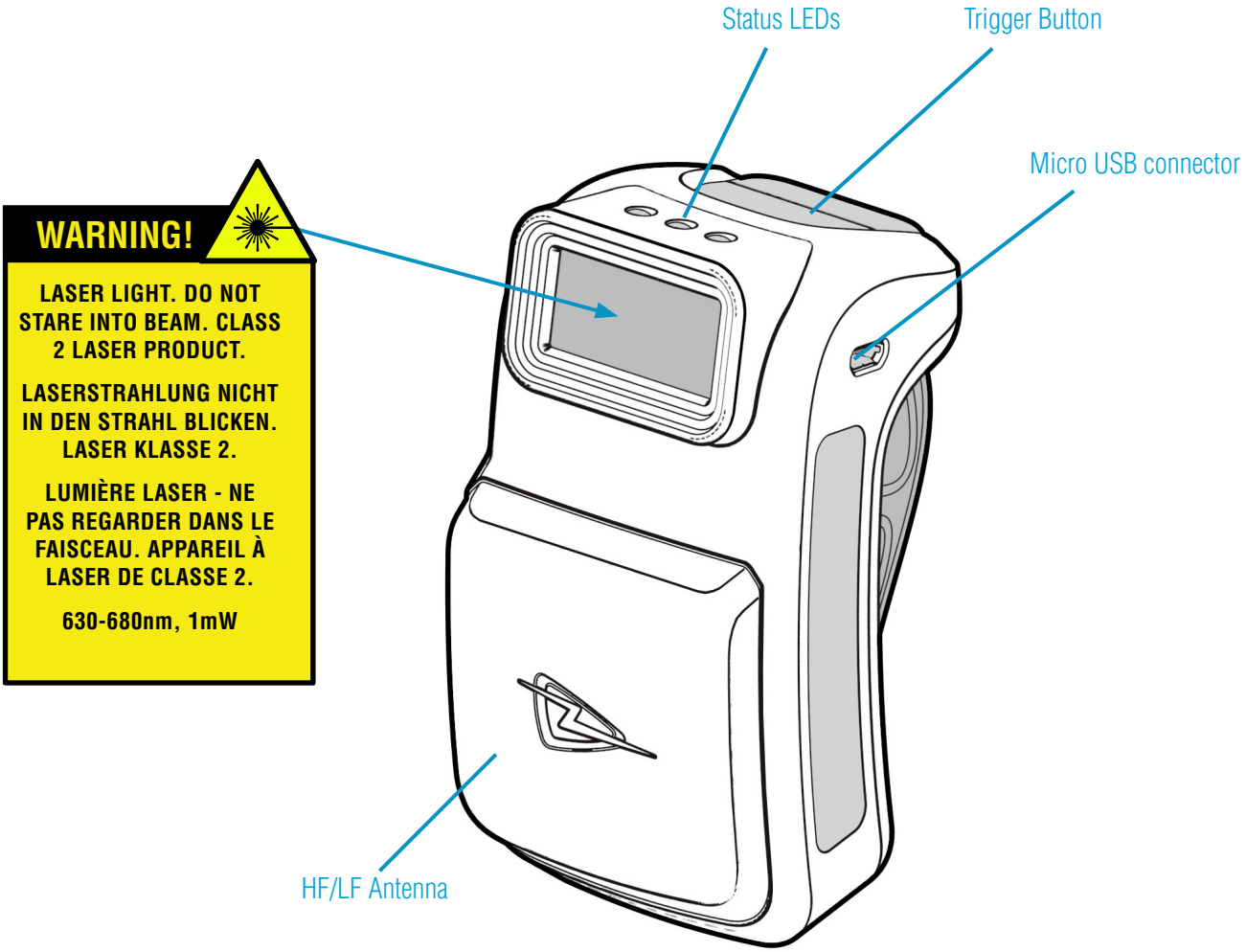

figure 1: Parts of the 2173 HF/LF Reader

USING THE 2173 HF/LF READER

BATTERY INSTALLATION OR REMOVAL

The battery is charged using the supplied micro USB lead and therefore is unlikely to need to be changed once installed. To access the battery compartment a slider switch must be moved. The battery compartment cover has a release latch. To access the battery compartment, move the battery cover release slider to the position shown in the diagram below.

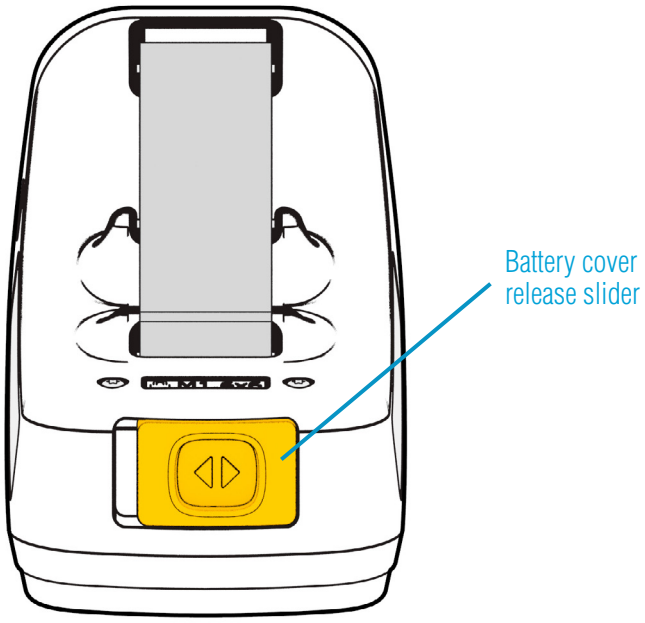

Figure 2: Battery cover release slider in locked position

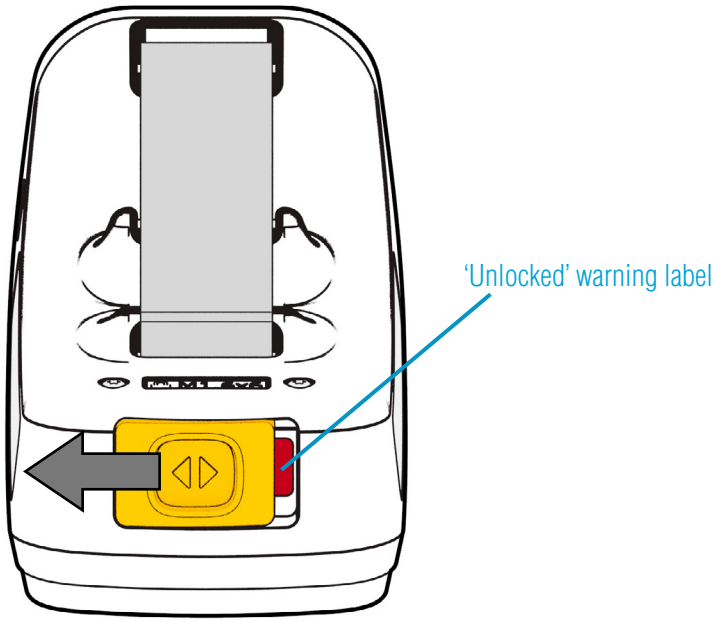

Figure 3: Battery cover release slider in unlocked position

Once the battery cover release slider has been moved to the unlocked position, the battery cover can be removed by simply pulling away from the 2173 body:

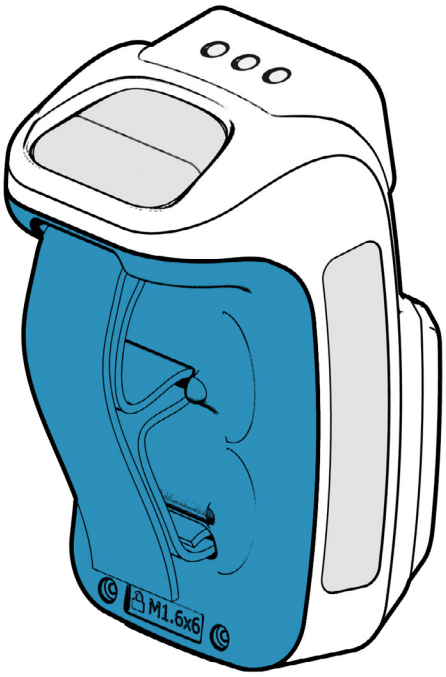

Figure 4: Removeable battery cover

Figure 5: Remove battery cover in this direction

The battery contacts need to be face down at the top of the battery to meet the contacts shown in the image below.

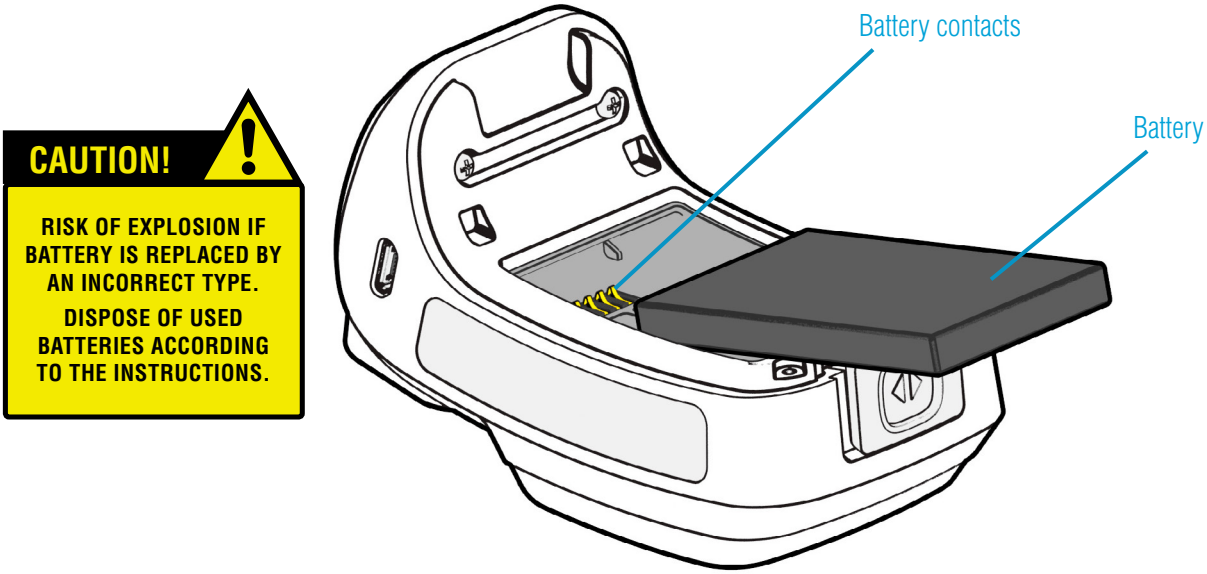

Figure 6: Battery placement

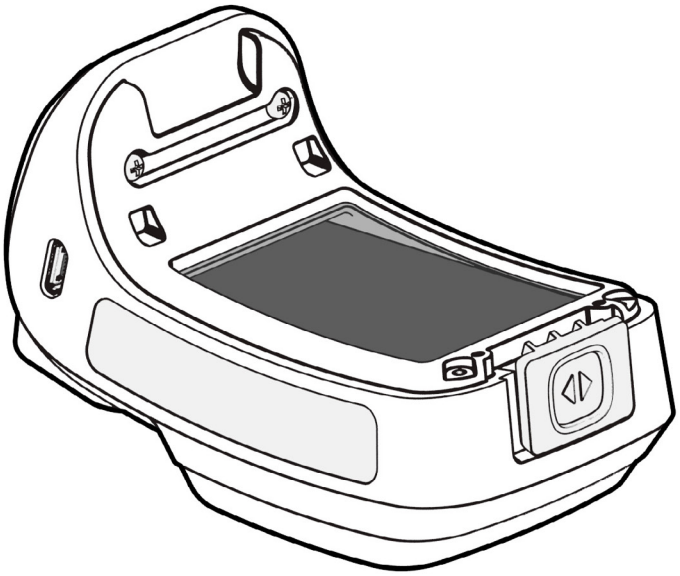

Figure 7: Battery in position

Once the battery is installed the actions to replace the cover are:

- Align the top edge of battery cover with the 2173 body
- Push the battery cover down into position
- Slide the locking switch into position

Figure 8: Replace battery cover

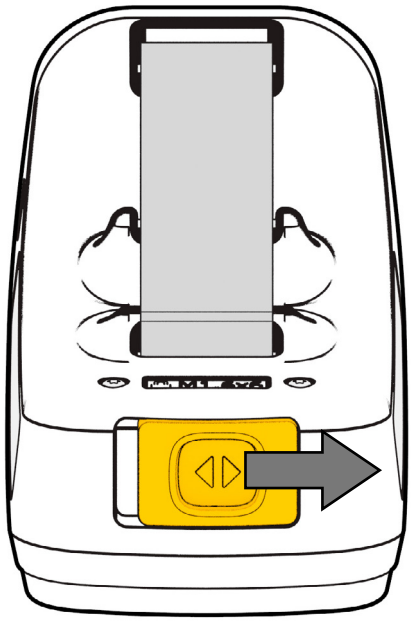

Figure 9: Move battery cover release slider to locked position

LOCKING THE BATTERY COVER (OPTIONAL)

The battery cover can be locked into position using two M1.6x6mm Torx pan head screws.

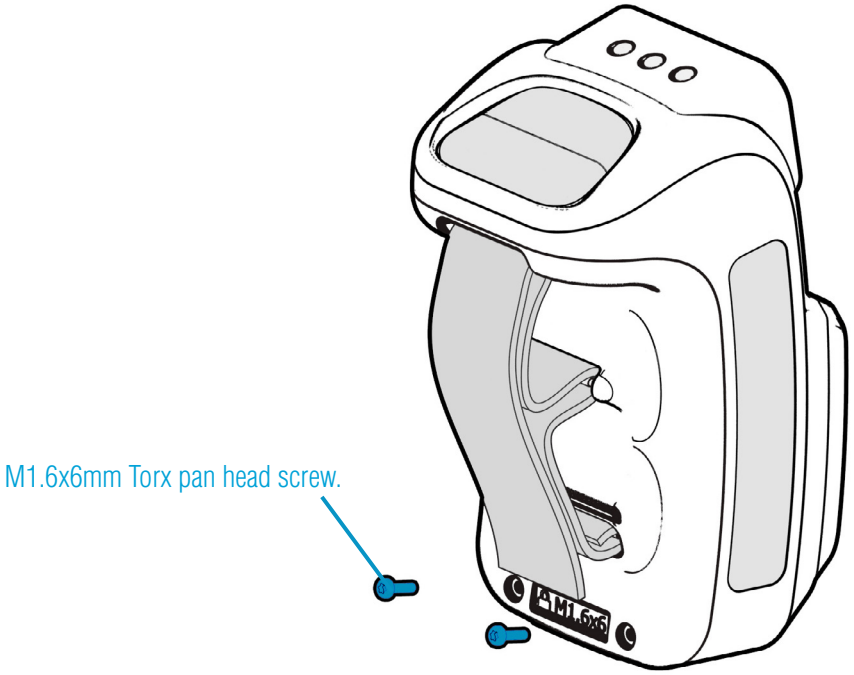

Figure 10: Battery cover locking screw location

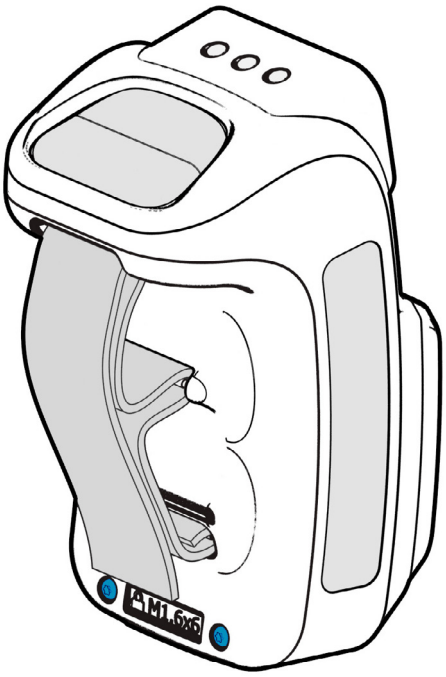

Figure 11: Battery cover fully locked

CHARGING AND MICRO USB CONNECTION

CONNECTING THE MICRO USB CABLE

The 2173 HF/LF Reader is supplied with a micro USB lead for charging and synchronisation. A USB PSU is also supplied for independent charging of the 2173 HF/LF Reader. The Micro USB connector is inserted into the 2173 HF/LF Reader as shown below.

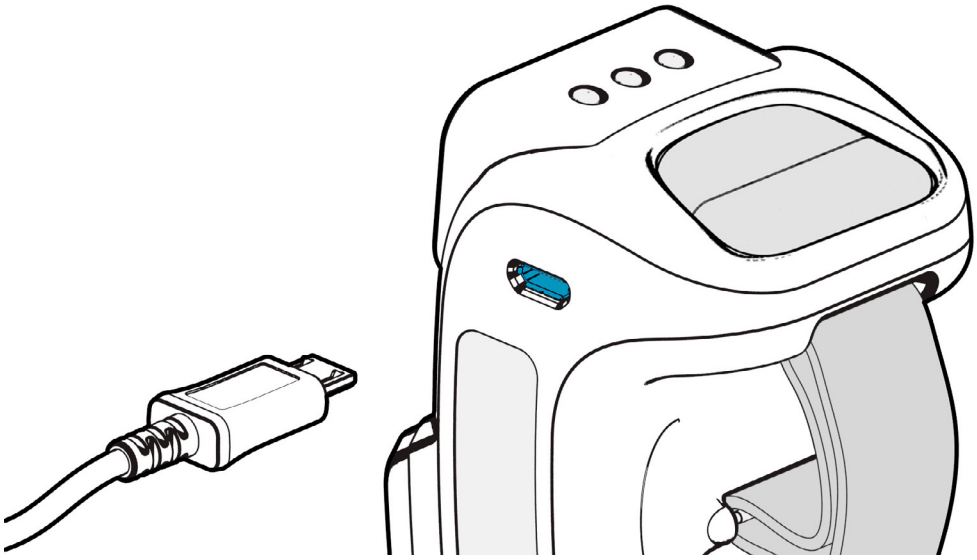

Figure 12: Location of Micro USB socket

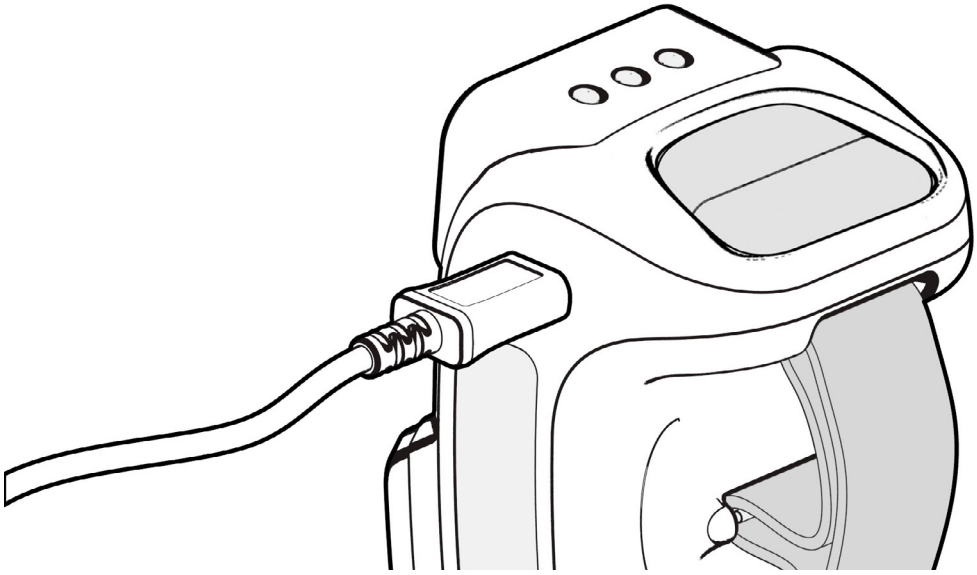

Figure 13: Attaching the Micro USB cable

BUTTON OPERATION

The 2173 HF/LF Reader has a Primary button action and a Secondary button action, which can be initiated by pressing the Primary or Secondary buttons on the top of the 2173 HF/LF Reader. By default, the Primary button action scans for HF/LF transponders, whilst the Secondary button action initiates the laser barcode scanner (requires 2D Imager). The button actions are also programmable for custom applications.

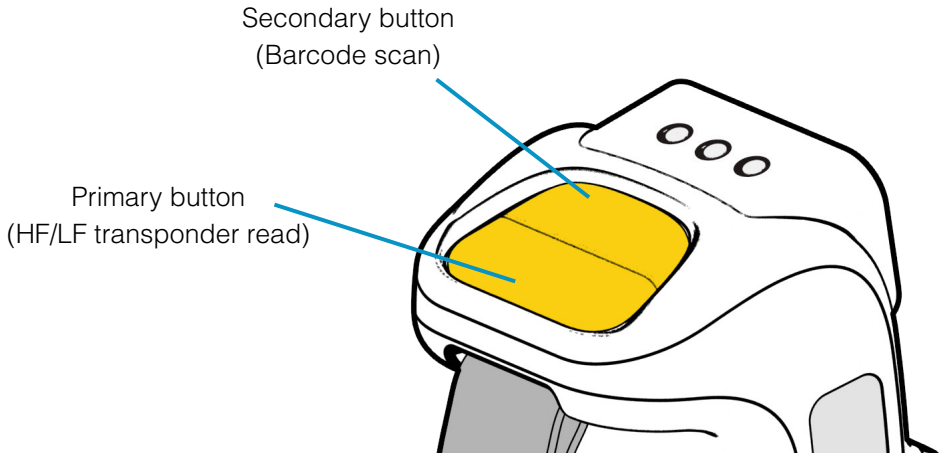

Figure 14: Location of Primary and Secondary Buttons

PRIMARY BUTTON ACTION
- HF/LF Transponder Read

In the default configuration the 2173 HF/LF Reader scans for HF/LF transponders as the primary button action. The 2173 HF/LF Reader will continue to scan for HF/LF transponders whilst the primary button is pressed. It will stop scanning once the button is released (and the current operation completes).

SECONDARY BUTTON ACTION
– Barcode Scan (requires 2D Imager)

In the default configuration the 2173 HF/LF Reader scans for barcodes as the secondary button action. The 2173 HF/LF Reader will continue to scan for a barcode while the button is pressed. It will stop scanning when any of the following conditions are met:

- A barcode is scanned.
- The button is released.
- The barcode engine times out.

In the default configuration, the secondary button action (Barcode scanning) can also be initiated by a rapid double-click-and-hold on the primary button.

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READING TRANSPONDERS

RFID transponders can be read when they are in range of the antenna. The antenna is located on the front of the 2173 HF/LF Reader. The range at which a transponder can be read depends on the transponder type and size, and
the number of transponders in the field.

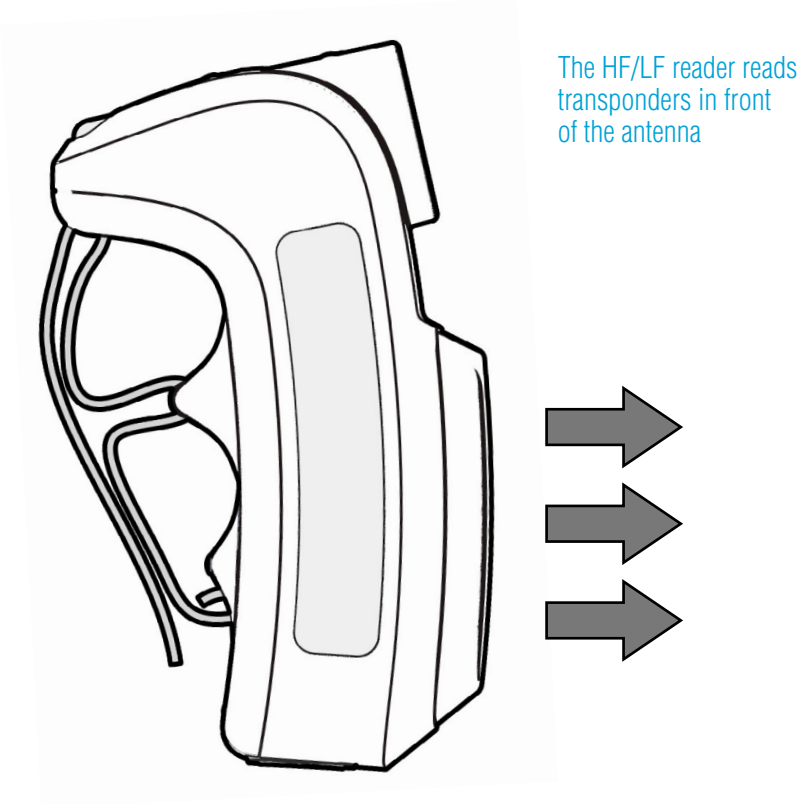

Figure 15: Antenna read direction

STATUS LED

The status LEDs on the top of the 2173 HF/LF Reader provides an indication of the operating status of the 2173 HF/LF Reader.

LED	Status
Blue slow flash (50% on, 50% off)	The reader is awake but there is no connection
Blue constant	The reader is awake and connected to a host
Short green flash	The reader has successfully read a tag or barcode or executed the alert command
Orange slow flash (50% on, 50% off)	Battery low warning (<10% capacity remaining), please recharge immediately
Orange short single slow flash	Battery charging with battery level less than 33%
Orange short double flash	Battery charging with battery level less than or equal to 66%
Orange short triple flash	Battery charging with battery level greater than 66%
Orange rapid flash	There is a charge error / battery fault
Orange constant	The reader is fully charged
All off	The reader is off and not charging

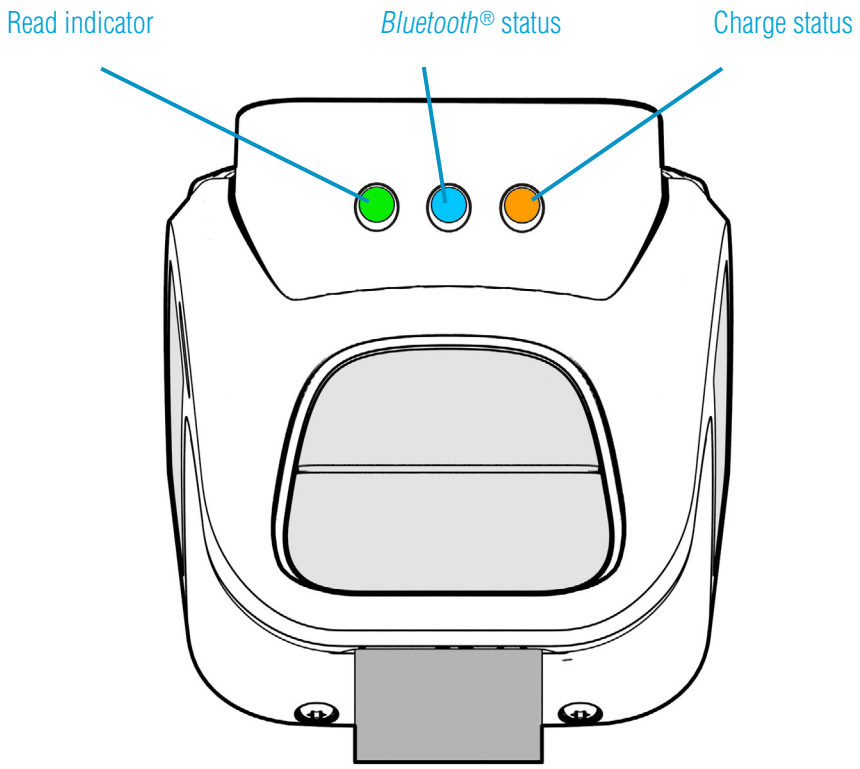

Figure 16: Location of status LEDs

CONNECTIONS

The connection to the 2173 is either via *Bluetooth*® or USB. *Bluetooth*® connections use either a Virtual Com Port (VCP) or via the iAP protocol for Apple devices. Over USB only VCP is available.

For VCP the connection is established at 115200 baud, 8 data bits, no parity, 1 stop bit and RTS/CTS (hardware) flow control.

COMPATIBLE PRODUCTS

The 2173 *Bluetooth*® Handheld HF/LF RFID Reader is compatible with many other *Bluetooth*® wireless technology enabled host devices including Android, Windows CE, Windows Mobile 5/6.1/6.5 and Windows XP/Vista/7/8.

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COMPARISON OF *BLUETOOTH*® OPERATING MODES

Our HF/LF RFID *Bluetooth*® readers support two modes of operation over *Bluetooth*®. When connected via USB the reader always supports the TSL ASCII 2 protocol, but when connected over *Bluetooth*® the reader can either be set to use the TSL ASCII 2 protocol (*Bluetooth*® SPP Mode) or it can appear as a *Bluetooth*® keyboard (*Bluetooth*® HID Mode).

The comparison chart below is designed to help you understand the differences between the two operating modes:

Bluetooth® SPP Mode	*Bluetooth*® HID Mode
Apps need to be written with specific support for the Reader	Apps can use the Reader without modification
The Reader can be discovered and paired in the Bluetooth Settings or from within the App but the App controls the connection • Connects when instructed by the App • Disconnects when instructed by the App • The reader powers off when no longer connected and idle • The App needs to connect to restore	Reader is discovered and paired in the Host Bluetooth Settings (often appears as a Keyboard) • After pairing the reader connects automatically • If idle the reader sleeps and the connection is dropped • The reader, when woken, automatically reconnects to the host device
Apps receive and interpret TSL ASCII 2 Protocol responses when the user triggers a HF/LF or barcode scan	Apps receive input as Key strokes from the reader including Tab and Return/Enter keys
The App can respond and react intelligently to responses e.g. • duplicate responses can be ignored or counted • incoming tag data can be truncated, stripped or transformed into alternative representations: Hex, ASCII, GS1 EPC URI, etc…	The reader types text for each barcode/HF/LF scan received • The tag values can be returned in Hex or ASCII representations • Up to 2 Additional characters can be inserted before and after the text sent • The reader cannot truncate or strip values from tag data
The App can change the Reader's behaviour	The Reader can only send scanned data to the host, the host cannot change the reader's behaviour
The Reader's behaviour and command parameters are controlled in real time by the App e.g. the trigger action can change to suit the task that the User is performing; the App can allow the User to specify Inventory output power	The Reader's behaviour, such as the action of the reader's trigger switch, the inventory output power, the idle sleep timeout and other command parameters can be configured only once at start-up.
Configuration is held within the App (any configuration in the AUTO.TXT is likely to be overridden by the App settings)	All configuration is held in an AUTO.TXT file stored on an SD-Card. Removing the SD-card or deleting the AUTO.TXT and power-cycling the unit restores default settings.
All reader activity, by default, is saved to a log file if an SD-Card is fitted.	All reader activity, by default, is saved to a log file if an SD-card is fitted.

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CHANGING THE *BLUETOOTH*® OPERATING MODE

TSL® *Bluetooth*® RFID Readers can be operated in *SPP mode* where the Reader is controlled by a custom-written application or in *HID mode*, where the Reader behaves like a *Bluetooth*® Keyboard.

The HID mode has two variants[i] :

1. *HID mode* Compatible with Android, Windows and Apple devices
2. *HID Apple mode* Compatible only with Apple devices providing an on-screen keyboard toggle

The *Bluetooth*® operating mode of a TSL® RFID Reader can be changed using the steps detailed below.

PREPARATION:

Download and install the "*TSL PC Firmware Downloader*" from the Reader product download page (free, one time, registration required)

https://www.tsl.com/downloads/tsl-products/1128-downloads/
https://www.tsl.com/downloads/tsl-products/1153-downloads/
https://www.tsl.com/downloads/tsl-products/1166-downloads/

TO SWITCH TO *BLUETOOTH*® HID MODE:

- First delete existing pairings to the HF/LF reader
- Launch the Firmware Downloader (*Desktop Firmware Loader*)
- Connect the HF/LF reader to the computer using the supplied USB cable.
- The driver should install automatically (*)
- The downloader should prompt as the com port arrives and select the com port automatically ("`COMn arrived`")
- Select **Action>Reset Bluetooth to HID mode** or **Action>Reset Bluetooth to HID Apple mode** (wait for the process to complete)
- Disconnect the HF/LF reader from the computer (unplug USB)
- Wake the HF/LF reader (pull trigger, blue flashing LED)
- Pair to the reader on the device (it typically appears as a keyboard icon and connects automatically)
- Scanned data should now be typed into the current application on the device

TO SWITCH TO *BLUETOOTH*® SPP MODE:

- First delete existing pairings to the HF/LF reader
- Launch the downloader (*Desktop Firmware Loader*)
- Connect the HF/LF reader to the computer using the supplied USB cable.
- The driver should install automatically (*)
- The downloader should prompt as the com port arrives and select the com port automatically ("`COMn`

- `arrived”)`
- Select **Action>Reset Bluetooth to SPP mode** (wait for the process to complete)
- Disconnect the HF/LF reader from the computer (unplug USB)
- Wake the HF/LF reader (pull trigger, blue flashing LED)
- Pair to the reader on the device

(*) if not download from here *http://www.ftdichip.com/Drivers/VCP.htm*

FURTHER INFORMATION

Further information can be found from the Reader Download pages (free, one-time, registration required - see links above)

Application Note – Bluetooth® HID mode: Provides further examples for configuring HID mode
Application Note – Using the Micro SD log and auto-run files: Describes using the AUTO.TXT
TSL ASCII Protocol 2.4 Rev B : Details all the commands including for HID `.st`, `.hs`, `.hc`, and `.hd`

If you encounter any issue while following the above procedure please contact *support@tsl.com* providing the following information:

- The serial number of the HF/LF Reader
- The Firmware version of the HF/LF Reader
- The step at which the procedure failed
- A description of the fault that occurred

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[i]Firmware requirements: 1128 - v4.2.7 or greater; 1153 – v2.1.7 or greater; 1166 – v1.1.6 or greater

SETTING UP A *BLUETOOTH*® CONNECTION WITH AN APPLE PRODUCT

Awaken the 2173 HF/LF Reader by squeezing the trigger, which is confirmed by the flashing of the blue LED. To pair with your iOS device, navigate to the *Bluetooth*® option within the Settings menu on your iOS device.

VIEW LIST OF *BLUETOOTH*® DEVICES (IOS 7)

iPad® :

Figure 18: List of devices in *Bluetooth*® settings

- Go to the Settings App.
- Select the *Bluetooth*® settings in the left hand column.

iPod® / iPhone® :

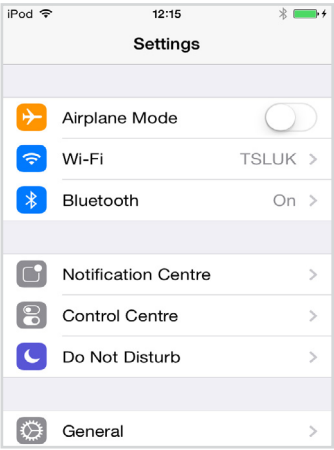


Figure 19: Select *Bluetooth*® settings

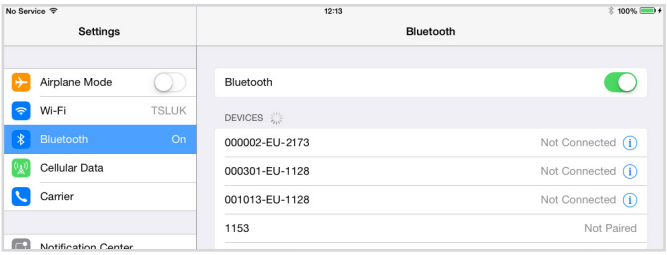
- Go to the Settings App.

Figure 20: List of devices in *Bluetooth*® settings

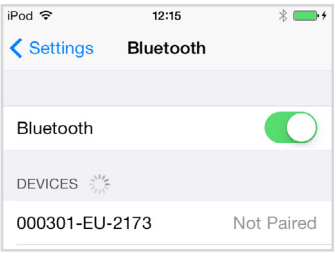
- Tap on the *Bluetooth*® row to be taken to the *Bluetooth*® settings

PAIR WITH TSL *BLUETOOTH*® DEVICE

In the list of *Bluetooth*® devices, the 2173 HF/LF reader will be identified by its serial number (xxxxxx-xx-2173). Click on the corresponding row to pair with the reader.



iPad®



iPod® / iPhone®

Figure 21: Identify device

After successfully pairing with the 2173 HF/LF Reader the device will be shown as 'connected'.

iPad®

iPod® / iPhone®

Figure 22: Device connected

You may also need to set up an additional connection to the 2173 HF/LF Reader within the application you are using.

MICRO SD CARD

LOCATION AND INSTALLATION

A Micro SD card can be installed in to the 2173 reader. The card should be SD/SDHC compatible, FAT16 or FAT32 up to 32 GB. The MicroSD card slot is located inside the battery compartment.

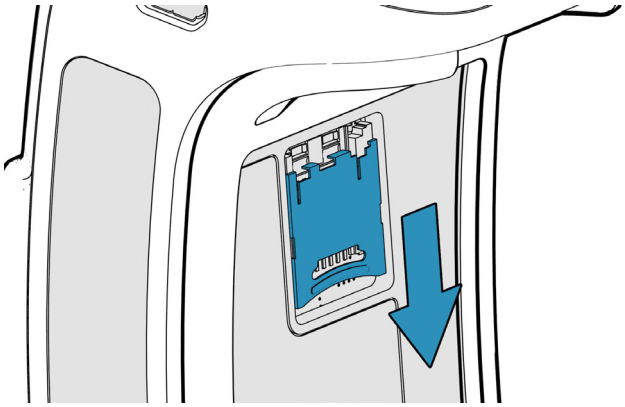


Figure 13: Slide card slot into unlocked position

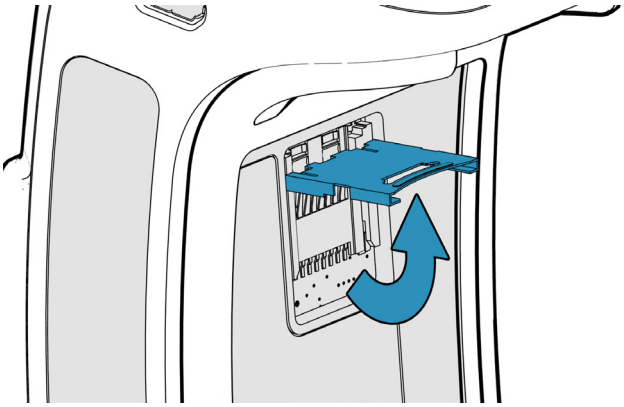


Figure 13: Rotate card slot outwards

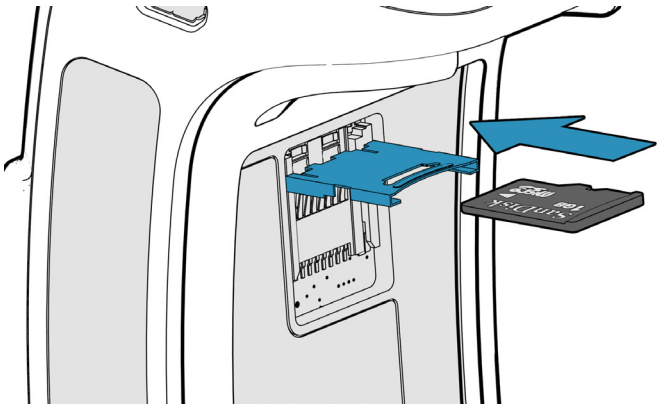


Figure 13: Insert MicroSD into card slot

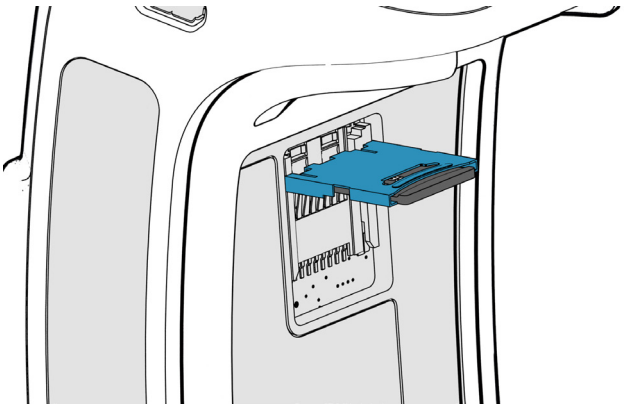


Figure 13: MicroSD inserted correctly

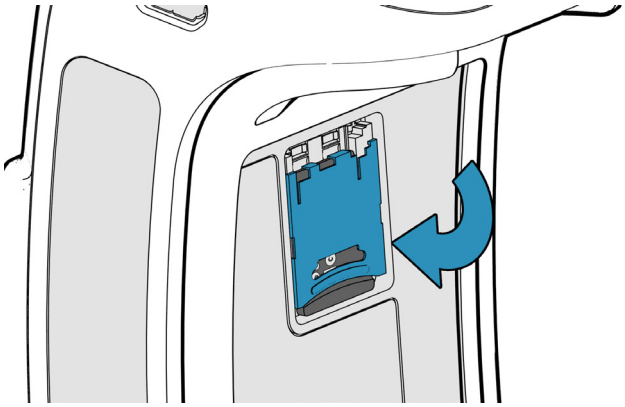


Figure 13: Rotate card slot downwards

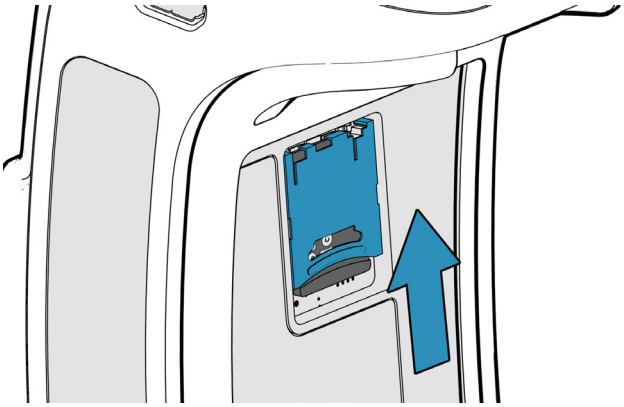


Figure 13: Slide card slot into locked position

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AUTO RUN FILE (AUTO.TXT)

Once an SD card is installed an Auto Run file can be created on the SD card. The Auto Run file contains a list of ASCII 2 commands that are executed as the 2173 powers up. The file should be located at the root of the card and called “AUTO.TXT”. Although the file can contain any valid ASCII 2 commands, one per line, it is intended that these have the take no action ‘-x’ flag specified to allow the default parameters for any command to be changed from the firmware defaults as the unit boots without actually executing the command.
For example to change the carrier power of the inventory command from 29dBm to 20dBm
‘.iv -o20 -x’ would be appended to the Auto Run file. As is the behaviour with command parameters this will set the output power for the inventory command until a new value is sent with this command. Therefore the inventories executed by the trigger, which executes ‘.iv’ will use the modified output power.
The Auto Run file can be manually created on the card before it is inserted into the 2173 or the ASCII 2 command Write Command to Auto Run File ‘.wa’ can be used. The Read Auto Run File ‘.ra’ can be used to read back the contents of the Auto Run file or delete the file from the card.

LOG FILE (LOG.TXT)

Once an SD card is installed and logging is enabled a log file is created on the SD card. The file is located at the root of the card and called “LOG.TXT”. All the lines from every response to every command that is executed by the reader (including those performed from trigger actions) are appended to the end of the file. Events such as Power up are also appended to the file.
The ASCII 2 Read Log File command (‘.rl’) is provided to enable or disable logging, to read the log file from the card or to delete the log file from the card.
Please note that the log file can quickly become large relative to the speed at which it can be downloaded using the Read Log File Command.
Start of a sample log output:

```
DT: 2013-11-15T16:46:58
EV: Log File created
CS: .ws -sa4 -sbepc -sd300833B2DDD9014000000000 -sl06 -so0002 -sts2 -dbepc -da330DE29525C0210005F5F88A
-dl06 -do0002
WW: 0
ME: No Transponder found
ER:005
DT: 2013-11-15T17:58:28
EV: Disconnected
DT: 2013-11-15T17:59:28
EV: Sleep
DT: 2013-11-18T09:18:21
EV: Wake up
CS: .al -dlon
OK:
DT: 2013-11-18T09:19:22
EV: Sleep
DT: 2013-11-18T10:07:42
EV: Wake up
DT: 2013-11-18T10:07:42
EV: Connected USB
CS: .al -dlon
OK:
CS: .iv LCMD 000000 -qss0 -qta
EP: 330DE29525C0210005F5F8F2
EP: 221001500000000000000027
OK:
```

SOFTWARE DEVELOPMENT

To make full use of the functionality of the 2173 HF/LF Reader, a customised software application will be required.

The new 2173 *Bluetooth*® HF/LF RFID reader incorporates TSL's unique ASCII protocol for faster and easier application development. This sophisticated parameterised ASCII protocol provides the developer a powerful set of commands that carry out multiple actions locally within the *Bluetooth*® reader. This approach enables multiple tag operations executed using simple pre-configured ASCII commands which not only speeds integration of the reader into applications but also abstracts the developer from some of the complexities of the underlying Native API. Simple, text based commands are sent to the reader and responses are returned as text. This allows straightforward access to RFID tag functions such as inventory, read and write. Details of the ASCII command mode are available for download from http://www.tsl.uk.com/1153-downloads/ .

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TROUBLESHOOTING AND MAINTENANCE

MAINTENANCE

For trouble-free service please observe the following tips when using the 2173 HF/LF Reader:

- Protect the 2173 HF/LF Reader from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep it away from heat sources.

TROUBLESHOOTING

Symptoms	Possible cause	Action
Nothing happens when the yellow button is pressed.	If the LEDs are not on then the battery may be flat.	Charge the 2173 HF/LF Reader.
	The 2173 HF/LF Reader may have button actions disabled.	Check the 2173 HF/LF Reader configuration and restore to defaults if unsure.
	Other.	Work through *Troubleshooting Guide* on TSL® Website
The orange LED flashes rapidly when charging.	There is a battery fault.	Replace the battery pack.
	The battery pack temperature is outside recommended limits.	Ensure that charging only occurs between 5°C and 40°C.
The host *Bluetooth*® discovery does not find the 2173 HF/LF Reader.	The 2173 HF/LF Reader has powered off.	Press the yellow button and ensure the blue LED is flashing.
	The 2173 HF/LF Reader is out of range.	Move the 2173 HF/LF Reader closer to the host.
	The *Bluetooth*® friendly name of the 2173 HF/LF Reader has been changed.	Check the *Bluetooth*® friendly name or restore the 2173 HF/LF Reader to factory defaults if unsure.
Opening the *Bluetooth*® virtual com port does not connect to the 2173 HF/LF Reader.	The host has paired to a different *Bluetooth*® device.	Pair to the required 2173 HF/LF Reader.
	The host *Bluetooth*® function has an error.	Warm boot the host. If this does not help, delete the 2173 HF/LF Reader from the favourites list and re-pair.
Bluetooth® pairing fails.	The PIN on the 2173 HF/LF Reader has been changed	Set the *Bluetooth*® PIN to a known value
Other symptoms.	Other fault.	Run *ASCII Remote Diagnostic* and email result to *support@tsl.com* along with a description of the problem.

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REGULATORY INFORMATION

INFORMATION TO THE USER – FCC

Federal Communication Commission 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.

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 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/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

The product comply with the FCC portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

LASER WARNING

A warning label is also shown on the side of the reader when a barcode reader is fitted.

The barcode reader module complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007, EN60825-1:2007 and IEC60825-1:2001 (Ed.1.2)

Avoid unnecessary exposure to the laser light.

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

Caution: Viewing the illumination from the barcode reader with optical instruments may result in increased hazard.

HEALTH AND SAFETY RECOMMENDATIONS

Ergonomic Recommendations

Caution: In order to avoid or minimize the potential risk of ergonomic injury, follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury.

- Reduce or eliminate repetitive motion
- Maintain a natural position
- Reduce or eliminate excessive force
- Keep objects that are used frequently within easy reach Perform tasks at correct heights
- Reduce or eliminate vibration
- Reduce or eliminate direct pressure
- Provide adjustable workstations
- Provide adequate clearance
- Provide a suitable working environment
- Improve work procedures.

For vehicle installation and use

An air bag inflates with great force. DO NOT place objects, including either installed or portable wireless equipment, in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles (including safety systems). Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

Power Supply

Use only TSL-approved cradles, chargers and power supplies with the 2173 HF/LF Reader. Use of an alternative power supply will invalidate any approval given to this device, void the warranty for the product and may be dangerous.

Battery Warning

Replace battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and local disposal requirements.

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WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

For EU Customers: All products at the end of their life must be returned to TSL for recycling. For information on how to return product please contact TSL.

WARRANTY

(A) Warranty

TSL's hardware Products are warranted against defects in workmanship and materials for a period of twelve (12) months from the date of shipment, unless otherwise provided by TSL in writing, provided the Product remains unmodified and is operated under normal and proper conditions. Warranty provisions and durations on software, integrated installed systems, Product modified or designed to meet specific customer specifications ("Custom Products"), remanufactured products, and reconditioned or upgraded products, shall be as provided in the applicable Product specification in effect at the time of purchase or in the accompanying software license.

(B) Spare Parts

Spare parts (i.e. parts, components, or subassemblies sold by TSL for use in the service and maintenance of Products) are warranted against defects in workmanship and materials for a period of thirty (30) days from the date of shipment. Spare parts may be new or originate from returned units under the conditions set forth in subsection D below.

(C) Repair of TSL branded hardware

For repairs on TSL branded hardware Products under this Agreement, including repairs covered by warranty, the repair services provided are warranted against defects in workmanship and materials on the repaired component of the Product for a period of thirty (30) days from the shipment date of the repaired Product, or until the end of the original warranty period, whichever is longer. Any such defects shall be notified to TSL in writing within 7 days of the same becoming apparent.

(D) Product Service

Products may be serviced or manufactured with parts, components, or subassemblies that originate from returned products and that have been tested as meeting applicable specifications for equivalent new material and Products. The sole obligation of TSL for defective hardware Products is limited to repair or replacement (at TSL's option) on a "return to base (RTB)" basis with prior TSL authorisation.

Customer is responsible for prompt shipment to TSL and assumes all costs and risks associated with this transportation; return shipment to the Customer will be at TSL's expense. Customer shall be responsible for return shipment charges for product returned where TSL determines there is no defect ("No Defect Found"), or for product returned that TSL determines is not eligible for warranty repair. No charge will be made to Buyer for replacement parts for warranty repairs. TSL is not responsible for any damage to or loss of any software programs, data or removable data storage media, or the restoration or reinstallation of any software programs or data other than the software, if any, installed by TSL during manufacture of the Product.

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(E) Original Warranty Period

Except for the warranty applying solely to the repaired component arising from a repair service as provided in Section C above, the aforementioned provisions do not extend the original warranty period of any Product that had either been repaired or replaced by TSL.

(F) Warranty Provisions

The above warranty provisions shall not apply to any Product:
(i) which has been repaired, tampered with, altered or modified, except by TSL's authorized service personnel;
(ii) in which the defects or damage to the Product result from normal wear and tear, misuse, negligence, improper storage, water or other liquids, battery leakage, use of parts or accessories not approved or supplied by TSL, or failure to perform operator handling and scheduled maintenance instructions supplied by TSL;
(iii) which has been subjected to unusual physical or electrical stress, abuse, or accident, or forces or exposure beyond normal use within the specified operational and environmental parameters set forth in the applicable Product specification; nor shall the above warranty provisions apply to any expendable or consumable items, such as batteries, supplied with the Product.

EXCEPT FOR THE WARRANTY OF TITLE AND THE EXPRESS WARRANTIES STATED ABOVE, TSL DISCLAIMS ALL WARRANTIES ON PRODUCTS FURNISHED HEREUNDER INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD. SOME STATES OR COUNTRIES DO NOT ALLOW A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR CONSUMER PRODUCTS. IN SUCH STATES OR COUNTRIES, FOR SUCH PRODUCTS, SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY.

The stated express warranties are in lieu of all obligations or liabilities on the part of TSL for damages, including but not limited to, special, indirect or consequential damages arising out of or in connection with the use or performance of the Product or service. TSL's liability for damages to Buyer or others resulting from the use of any Product or service furnished hereunder shall in no way exceed the purchase price of said Product or the fair market value of said service, except in instances of injury to persons or property.

TSL is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty. If the original shipping container was not kept, contact your local distributor or TSL to have another sent to you.

TSL shall not be responsible for any injury, damage or loss of whatever kind caused directly or indirectly by the goods whether as a result of their manufacture, operation, use or otherwise and the customer shall indemnify TSL from any claim arising from any loss suffered by any third party.

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ABOUT TSL®

ABOUT

TSL® | Global Leaders in Mobile RFID

Technology Solutions UK Ltd (TSL®) is a leading manufacturer of high performance mobile RFID readers used to identify and track products, assets, data or personnel.

For over two decades, TSL® has delivered innovative data capture solutions to Fortune 500 companies around the world using a global network of distributors and system integrators. Specialist in-house teams design all aspects of the finished products and software ecosystems, including electronics, firmware, application development tools, RF design and injection mould tooling.

TSL® is an ISO 9001:2015 certified company.

ISO 9001: 2015

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