Honeywell

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IH21

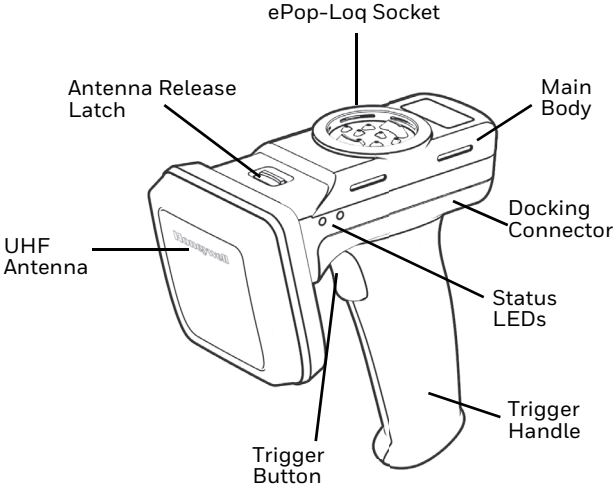
***Bluetooth*® UHF RFID Reader**

Quick Start Guide

IH21-EN-QS REV A
08/18

Introduction

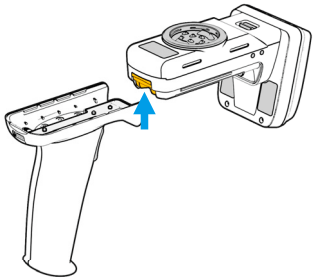
The IH21 *Bluetooth*® UHF RFID Reader provides Ultra High Frequency (UHF) Radio Frequency Identification (RFID), with optional barcode scanning functionality. The unit can be used in batch mode using an optional Micro SD card, or can be connected via USB through the *ePop-Loq*® socket, or connected to a host device via *Bluetooth*. The IH21 can read and write to EPC Global Class 1 Gen 2 UHF RFID transponders.



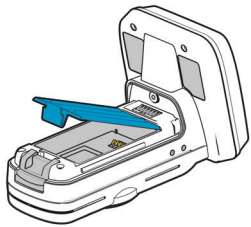
Battery Installation

The battery is charged using a docking station and is therefore unlikely to need to be changed once installed. To access the battery compartment the grip handle must first be removed.

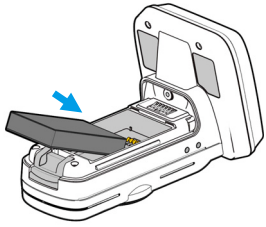
Step 1. Push the handle release latch upwards and slide the trigger handle off the main body.



Step 2. Remove the battery cover.



Step 3. Insert the battery, ensuring contacts align with the contacts on the Main Body.

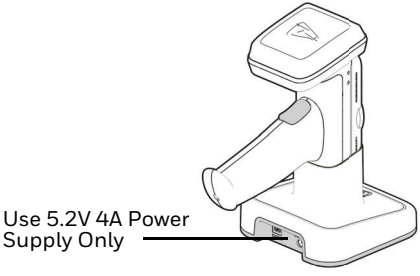


Step 4. Re-attach the battery cover and trigger handle.

Charging

To comply with international shipping regulations, batteries included with the product are discharged to less than 30% of their maximum capacity when shipped. It is therefore important that the unit is fully charged before using the IH21 UHF Reader for the first time.

The IH21 UHF Reader can be charged using the dedicated IH21 Docking Station. The Docking Station has an input for power and mini USB connector for data communications.



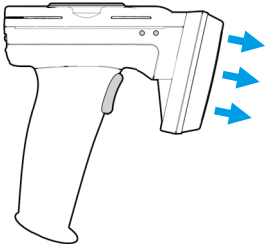
Button Operation

The IH21 UHF Reader has a Primary button action, which can be initiated by single click of the Trigger Button. The Single click button options are also programmable for custom applications.

Reading Transponders

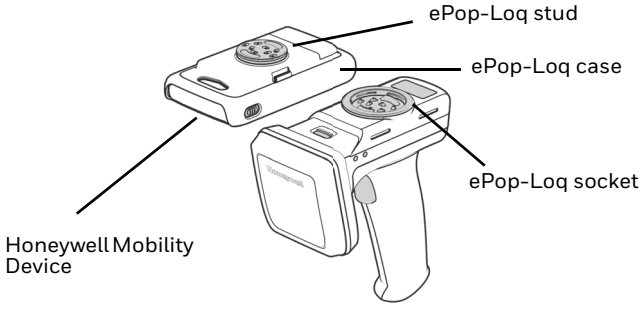
The IH21 UHF Reader can read and write to UHF RFID transponders when they are in range of the antenna. The antenna is located on the front of the IH21 UHF Reader and the read zone is in front of the antenna.

The range at which a transponder can be read depends on the transponder type and size, and the number of transponders in the field.



Attaching Devices

The IH21 UHF RFID Reader has an ePop-Loq mount which allows mobile terminals to be physically attached to the IH21 UHF Reader. Custom ePop-Loq cases allow compatible devices with custom applications to communicate with the reader via USB instead of *Bluetooth*.



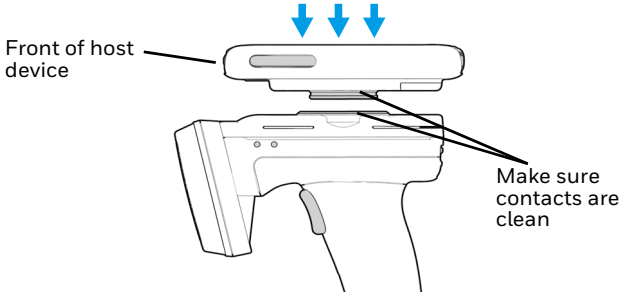
Fitting an ePop-Loq case

Step 1. Ensure the mobile terminal is fitted into its ePop-Loq case *before* attaching the case to the IH21 UHF RFID Reader. This prevents over-flexing of the case.

Step 2. Make sure all of the contacts - on both the ePop- Loq socket and stud - are clean and free from dirt or debris.

Step 3. Align the ePop-Loq stud with the ePop-Loq socket - ensuring that the front of the host device is pointing towards the antenna - and press the two parts together until they click into place.

Step 4. To remove the ePop-Loq case, pull in the opposite direction. Do not twist the devices when separating.



USB Connection

The ePop-Loq USB connection on the IH21 can be configured in one of two modes – Charge-Only or Charge-and-Data. Please ensure the mode required is correctly configured.

- Charge-Only mode: Both the IH21 UHF Reader and the mounted device will be charged when docked in the charging cradle, but will never use the USB data connection.
- Charge-and-Data mode:Compatible devices will use the USB data connection when not in the charging cradle. Note that USB data connection to the IH21 requires a custom application that supports the TSL® ASCII protocol over USB.

Bluetooth Connection

The IH21 *Bluetooth* Handheld UHF RFID Reader is compatible with many *Bluetooth* wireless technology enabled host devices including Android and Xamarin.

The *Bluetooth* version is BT4.2 and supports both *Bluetooth* Low Energy and *Bluetooth* Classic.

To pair with a *Bluetooth* host device

Squeeze the Trigger Button to wake up the IH21 UHF Reader and wait for the blue LED to start flashing (if it does not flash, please check the battery is charged and properly installed).

In your host device's '*Bluetooth*® Settings' page, search for and pair with the IH21 UHF Reader. In the list of *Bluetooth*® devices, the IH21 UHF Reader will be identified by its serial number (xxxxxx-IH21). (Make sure the Reader has not 'timed-out' and gone to sleep, as it will not be discoverable).

Once a *Bluetooth*® connection has been successfully established, the blue LED will stop flashing and stay on continuously.

Install a compatible application (such as TSL®'s RFID Explorer App) on your mobile terminal. RFID Explorer can be downloaded from the App Store or Google Play.

Open your compatible application and select the IH21 UHF Reader

from the list of available devices. The IH21 UHF Reader should now be ready to use!

Bluetooth Operating Mode

Note: *The UHF RFID Bluetooth Readers support two different modes of operation over Bluetooth.*

Bluetooth SPP Mode

By default, the IH21 UHF Reader is set to SPP Mode. In this mode, the IH21 UHF Reader will only work with Apps that have been written with specific support for the IH21 UHF Reader. SPP Mode allows access to the full range of features available on the IH21 UHF Reader.

The IH21 UHF Reader must be set to SPP mode in order to work with RFID Explorer or any of the other free TSL® Apps (*www.tsl.com/apps*).

Bluetooth HID Mode

In HID mode, the IH21 UHF Reader appears as a *Bluetooth* Keyboard, making it compatible with the majority of Apps or Web Apps. Apps receive input as key strokes from the Reader. HID mode is better suited to reading UHF tags one at a time.

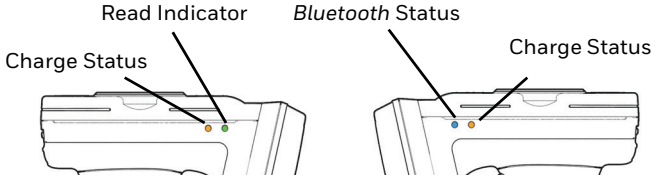
Further Information

For a detailed comparison between *Bluetooth* HID and SPP modes - and instructions on how to switch between these modes - download the '*Comparison of Bluetooth Modes for TSL® UHF Readers*' document from the IH21 Downloads Page (*www.tsl.com/IH21-downloads*).

For information and examples on configuring HID mode, download the '*Bluetooth HID mode*' application note (*www.tsl.com/IH21-downloads*).

Status LEDs

The status LEDs on the left and right sides of the IH21 UHF Reader provide an indication of the operating status:



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
Green slow flash (50% on, 50% off)	Antenna error - try reseating the antenna
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

Support

To search our knowledge base for a solution or to log into the Technical Support portal and report a problem, go to www.hsmcontactsupport.com.

User Documentation

For the user guide and other documentation, go to www.honeywellaidc.com.

Limited Warranty

For warranty information, go to www.honeywellaidc.com and click **Get Resources** > **Product Warranty**.

Patents

For patent information, see www.hsmpats.com.

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