# GPScanID 100 Series

# Portable RFID Stick Reader

# User Manual

**(Version 2.5)**

**Please read these instructions thoroughly before use**
**and always keep accessible**

**GPScanID Limited**

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# 1. Welcome

Thank you for purchasing the GPScanID 100 Series Portable RFID Stick Reader. We hope you find your reader easy to use, precisely engineered and manufactured to the highest quality.

Please take the time to become familiar with your reader and read the safety precautions, assembly and operating instructions thoroughly before use.

Keep this manual handy for easy reference. It is your guide to safe and efficient operation. A downloadable copy of this manual is also available in the following website:

https://www.GPScanID.com/download/manual or via the QR Code

Click the latest Version under **GPScanID 100 Series User Manual** to download.

Please also take a minute to register your reader in our website for warranty services. Details of the warranty terms are listed in Section 15. The registration website is located at:

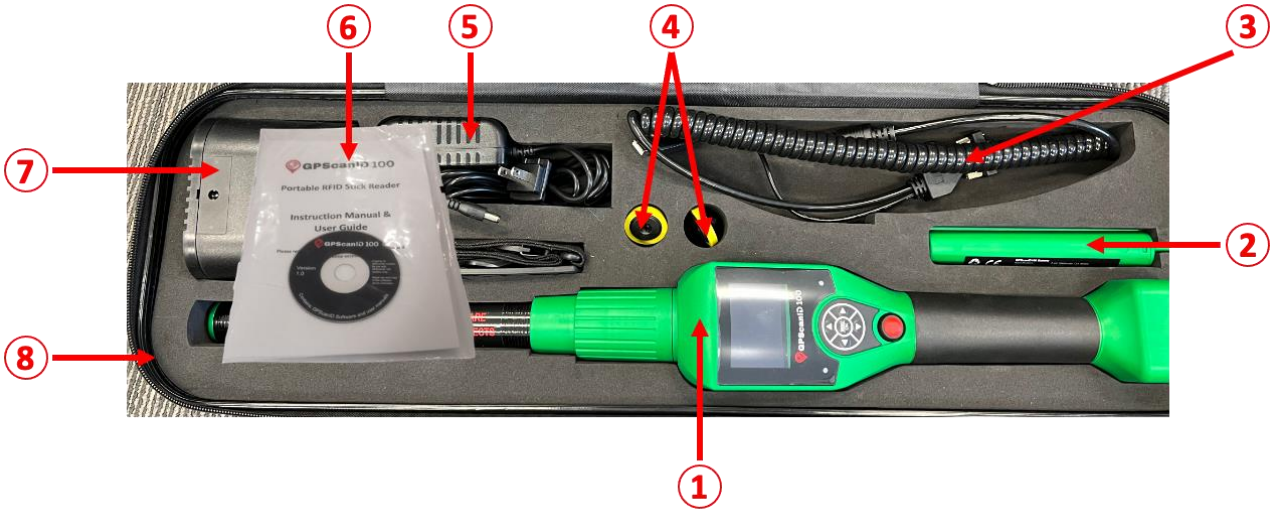
https://www.GPScanID.com/registration/ or via the QR Code

# 2. Safety Precautions

While we have designed and built the reader to the highest possible standard, it houses a Lithium battery, sophisticated electronics and numerous antennae for wireless communications, such as GPS and Bluetooth, that need to be handled with care. Please take the following precautions when handling the reader:

- Please handle the reader with care. Do not place the reader under extreme mechanical stress.
- Do not disassemble the battery or reader to expose internal components.
- Do not open the battery, data/charging caps or the antenna locking collar with wet hands.
- The reader when correctly assembled with the antenna, battery and data/charging caps firmly fitted, is waterproof and dustproof to IP67 rating. Under these conditions the internal components of the reader are protected from water and dust damage.
- Do not immerse the battery or the reader in water with a loose antenna locking collar, battery cap or data/charging cap. Any water or dust damage caused by poorly secured collars or caps will cause damage to the internal components.
- Do not use any third-party batteries.
- Do not overcharge the battery as it causes overheating and will shorten its service life. A full charge should take about 2.5 hours.
- Do not leave the reader or batteries in a high temperature environment such as strong direct sunlight or inside a vehicle in extreme hot weather. It will degrade battery performance and shorten the readers' service life.
- Take care when handling batteries. Do not let any battery terminals come in contact with metal objects, such as paper clips. This can cause short-circuiting and may lead to severe body injury.
- Follow the Manufacturers Charging instructions and only use a genuine battery charger supplied with the reader when charging the reader and batteries.
- If the reader or battery generates unusually high temperature during charging, turn the charger off, unplug the charger and remove the battery immediately. Contact the supplier you purchased the reader from or the manufacturer for assistance.
- Clean the reader only with a slightly dampened cloth after use. Do not use solvent cleaners to clean the reader.
- Store the reader and its accessories in a cool dry environment away from sunlight, heat and moisture.

# 3. Package Contents




The reader package includes the following components:

1. GPScanID 100 Series Reader with Caps and battery (fitted with Locking Collar and 25cm antenna)
2. Spare GPScanID 100 Battery (Optional)
3. Data/Charging Cable;
4. 2x Ear Tag Samples;
5. Battery Charger with Adapter;
6. GPScanID 100 Series User Manual, GPScanID Software Manual and Installation DVD disc (containing GPScanID Software and user manuals);
7. Charging Dock (Optional);
8. Plastic Carrying Case with padded foam.

** Reader appearance, configuration and packaging may vary between countries

Please contact your local supplier for any missing component(s).

# 4. Getting to know the Reader

The GPScanID 100 series of portable readers are specifically designed for reading livestock RFID tags. They are fully compliant with ISO standards ISO 11784/11785 for FDX-B and HDX technologies.

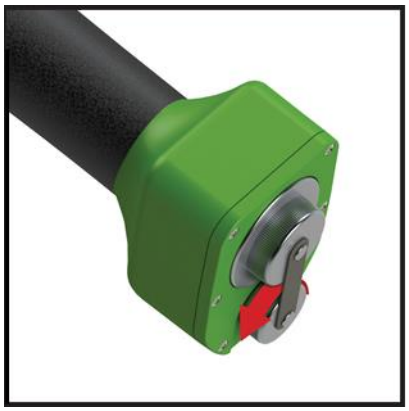
The GPScanID 100 series of readers have a wide range of built-in functions, including:

- Detachable antenna (available in different lengths) for reading different livestock or livestock being handled under varying conditions.
- Built-in GPS to record the location of the tags during reading.
- Large internal storage of up to 175,000 ID records in up to 1000 sessions, with each session identifiable by the date and time stamp when it was created. Each ID record carries its own timestamp, optional GPS location details and 4 user input fields.
- Supports a wide range of options for peripheral connectivity such as Personal Computers, SmartPhones, Weigh Scales, and Bluetooth Label Printers through RS-232, USB, Bluetooth and WiFi (for future enabling) technologies.

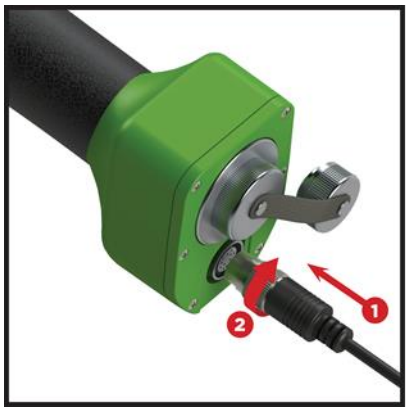
| | Item | Function |
|---|---|---|
| 1 | Detachable Antenna | Reads RFID transponders.<br>Available in 25cm and 60cm lengths. |
| 2 | Locking Collar | Secures the detachable antenna. |
| 3 | 2.4” Display | Displays menu items, prompts and messages. |
| 4 | Red (Left) LED Indicator | Indicates battery charging state and read errors. |
| 5 | Green (Right) LED Indicator | Indicates tags are read correctly. |
| 6 | 5-Way Menu Selector | Use to navigate the menu and make menu selections.<br>**Menu/OK Key**: Press to make selection or switch from **Read Menu** to **Main Menu**.<br>▲ ▼ ◄ ► **Keys**: To navigate through the menu options.<br>◄ ►: Also act as function keys to select action items highlighted in or |
| 7 | Read Button (Red) | Turns on the reader and reads tags when activated. |
| 8 | Battery Cap | Secures, shields and protects the removable battery. |
| 9 | Data/Charging Cap | Shields and protects the data/charging connector. |

# 5. Reader Initial Set Up

## 5.1 Charge the Reader



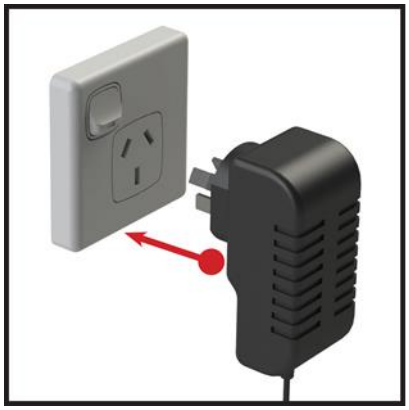
Remove the Data/Charging Cap at the end of the Reader by turning the cap in an anti-clockwise motion.




Connect the Data/Charging Cable to the Data/Charging port on the Reader.

Fasten the connector using a clockwise motion to secure it in place.

Plug the connector of the Battery Charger into the socket at the back of the 9 pin serial data connector on the Data/Charging Cable.



Plug the Battery Charger into the mains and power on. The Readers red LED indicates it is charging.

The Reader takes about 2.5 hours to be fully charged.

Users are recommended to charge the Reader at least once **every week** to keep the backup battery charged.

****** The optional Charging Dock allows you to charge up to 2 batteries at the same time. Simply plug the connector from the charger to the Charging Dock and insert one or both batteries to charge. Red LED indicates the battery is charging. Green LED indicates battery is fully charged.

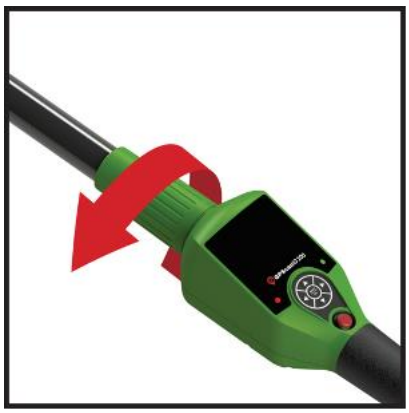
## 5.2 Changing the Antenna

Turn the locking collar in a clockwise motion until is is completely unthreaded.

Pull the antenna out of the reader.

Align the slot on the new antenna with the connector and push it towards the Reader.

Slide the Locking Collar over the end of the Detachable Antenna.



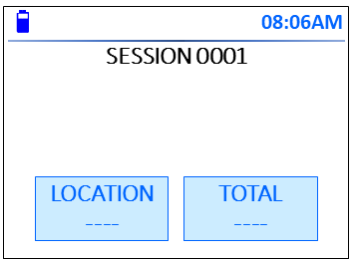
Fasten the locking collar back into place on the Reader by turning it anti-clockwise until firm (do not overtighten).

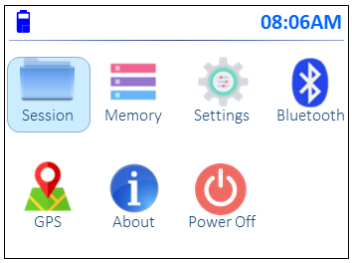
**** Antennas from the GPScanID 100 and GPScanID 150 Readers are not interchangeable despite they may have the same lengths.**

## 5.3 Turning the Reader On/Off

### Turning the Reader On

**Press and hold** the **Read Button** for 2-3 seconds. The start-up screen will display the **GPScanID logo*** followed by the **Reading screen.** Press the **Menu/OK button** to go to the **Main Menu**. You can return to the **Reading screen** by pressing the **Read button**.




* The exact GPScanID model number is displayed on the logo

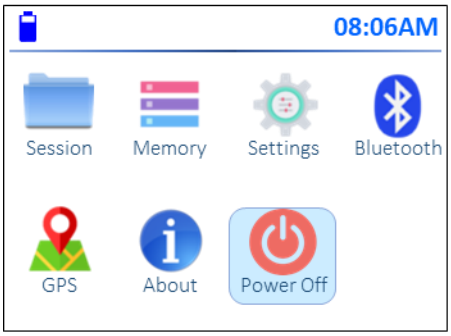
If GPS is enabled when the reader powers on, it may require up to 48 seconds to search and get a signal lock in an outdoor environment, unless it has been previously locked and is placed very close to a window/open area (GPS will not signal lock indoors). Search time will be prolonged when operating in semi-outdoors space where the reader requires extra time to search and lock on the satellites.

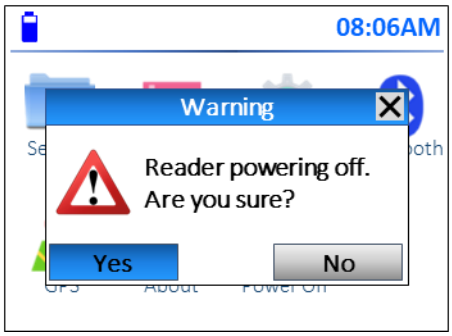
During the search, the GPS icon flashes red . If location details are required, please ensure the GPS is locked to a satellite before reading tags. When the GPS signal is locked to a satellite, the GPS icon changes to solid blue .

Refer to Chapter 6 for more details about operating or troubleshooting the GPS.

### Turning the Reader Off

To turn off the reader, **press** the **Menu/OK button** to bring out the **Main Menu**. Navigate to the **Power off** icon using the ▲ ▼ ◄ ► **Keys** then press the **MENU/OK button**. The screen prompts you to confirm whether to power off the reader. Select **Yes** then press the **Menu/OK button** to proceed. The reader will display the message **Powering off…**, issue 5 short beeps, and vibrate before shutting down.

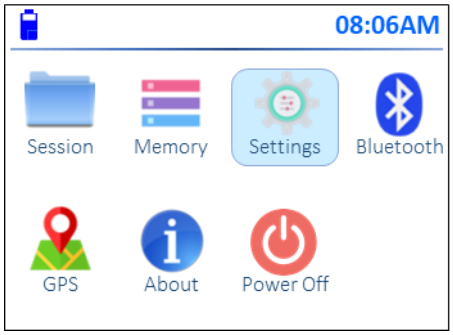


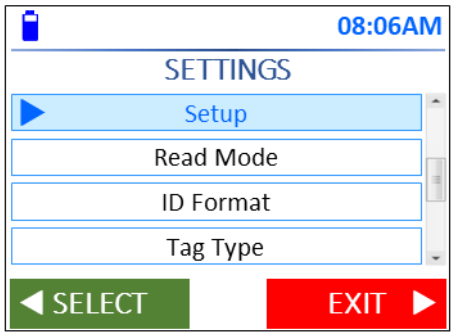
## 5.4 Initial Reader Set Up

It is recommended that the Name, Date/Time, Time Format and Auto Update options are set up before using the reader as they are required when connecting to other devices or retrieving recorded tag information accurately.

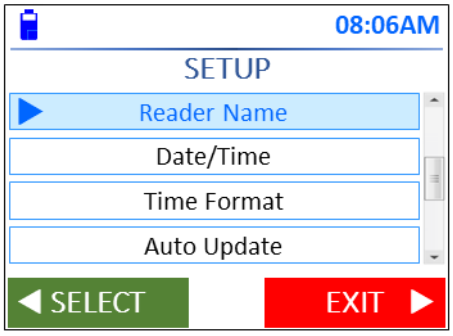
On the **Main Menu**, use the ▲ ▼ ◄ ► **Keys** to navigate to the **Settings** icon, then press the **MENU/OK Button** to select.




The following **Settings Menu** appears:




Use the ▲ / ▼ **keys** to navigate to **Setup** then press the ◄ **key or MENU/OK button** to select. The following **Setup Menu** appears.



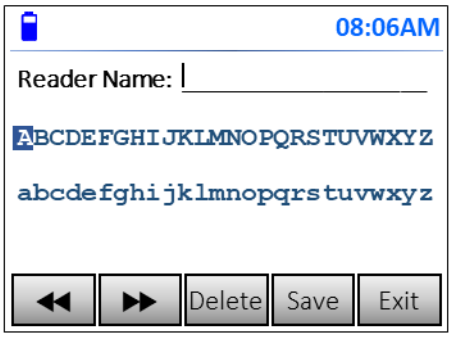

The menu defaults to the **Reader Name** setting. Start by setting up the **Reader Name** then proceed through each setting using the instructions on the proceeding pages.

## How to set up the Reader Name

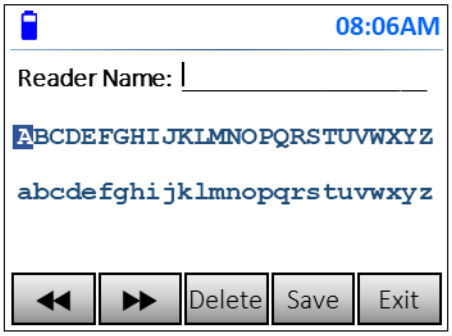
**Reader Name** is used to identify the reader when establishing Bluetooth and WiFi connections *(Note: WiFi connections are not yet enabled. This feature will be available in the future).*

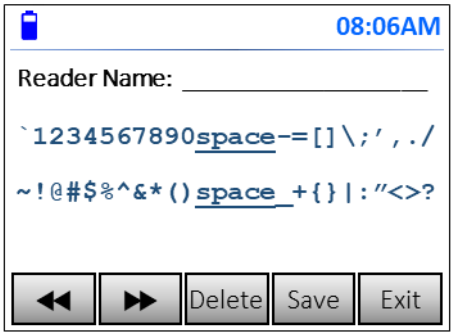
Use the ▲ / ▼ **Keys** to navigate to the **Reader Name** option. Then press the ◄ **key** or **MENU/OK button** to select.

The **Reader Name** prompt screen appears:



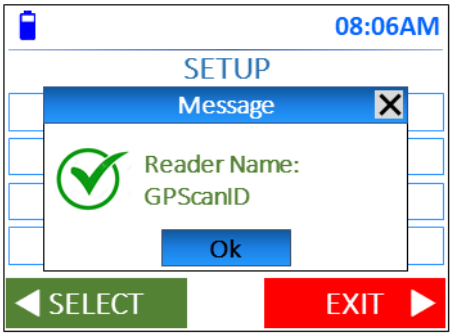

Use the ▲ ▼ ◄ ► **Keys** to navigate across or between the rows to the first character of the **Reader Name**. Press the **MENU/OK button** to select. Repeat for each character of the name. Use the ◀◀ and ▶▶ buttons to toggle between the alphabet and numeric symbol input screens. The **Reader Name** has a maximum length of 15 alpha-numeric digits. Only a...z, A...Z, or 0…9 are accepted. Space or other special characters should be used.




To delete a character, use the ▲ ▼ ◄ ► Keys to navigate to the **Delete** and press the **MENU/OK button**. To delete more characters, continue to press the **MENU/OK button** until all characters have been deleted.

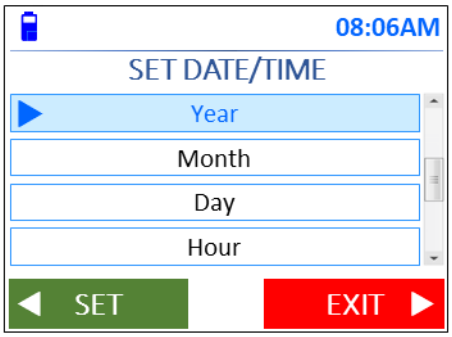
When finished inputting, navigate to **Save** and press the **MENU/OK button** to save. Press again to exit.



To exit the **Reader Name** set-up at any time, use the ▲ ▼ ◄ ► **Keys** to navigate to **Exit** and press **MENU/OK button** to return to the previous screen.

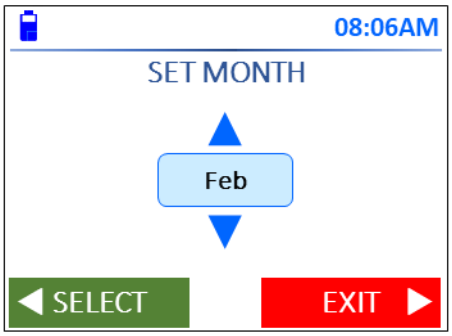
## How to set up Date and Time

Use the ▲ / ▼ **Keys** to navigate to **Date/Time** in the **Setup Menu** and press ◄ **key** or **MENU/OK button** to set up the Reader's date and time per the following screen. This is the system time of record when sessions are created, and tags are read.




Use the ▲ / ▼ **keys** to navigate to each input field. Press the ◄ **key** or **MENU/OK button** to select. Use the ▲ / ▼ **keys** to navigate to the appropriate values, then press **MENU/OK button** to save and exit.

In the following example, **Month** is selected. Press the ▲ / ▼ **keys** until the appropriate month is displayed, then press the ◄ **key** or **MENU/OK button** to select. Press the **MENU/OK button** again to confirm. You will return to the **Set Date/Time Menu** to continue modify other field settings.



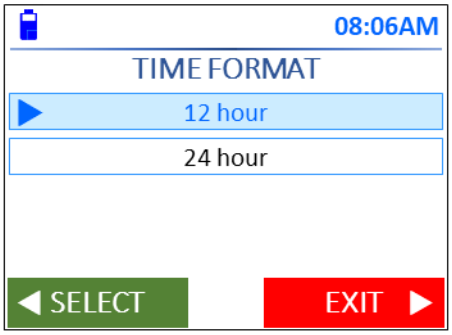

Use the ▲ / ▼ keys to navigate and adjust each field until all date and time settings are set up accurately.

Press the ► **key** to return to the main **Setup Menu**.

## How to set up Time Format

The default factory setting for the reader time format is **12-hour** format. You can set your reader to **24-hour** format as follows:

Use the ▲ / ▼ **Keys** to navigate to **Time Format** in the **Setup Menu**. Press ◄ **key** or **MENU/OK button** to select. The following screen is displayed.

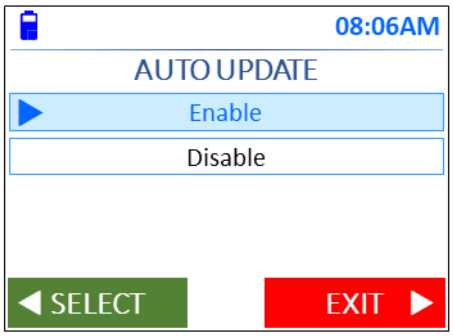



Use the ▲ / ▼ **Keys** to navigate to the required format and press ◄ **key** or **MENU/OK button** to select. Press the **MENU/OK button** to confirm and exit to the main **Setup** menu.

## Setting Up Auto Update

**Auto Update**, if enabled, automatically adjusts the reader's date and time to that of the connected peripheral device such as Personal Computer or SmartPhone. The reader default factory setting is set to **Disabled**.

To access the **Auto Update** menu, use the ▲ / ▼ **Keys** to navigate to **Auto Update** in the **Setup Menu.** Press the ◄ **key** or **MENU/OK button** to select



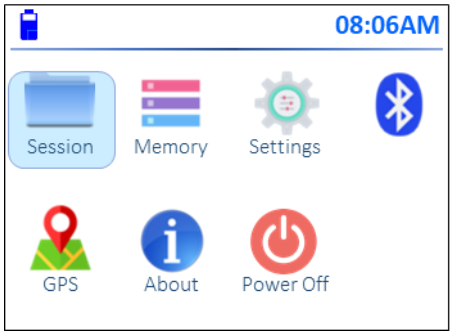

Use the ▲ / ▼ **Keys** to select the required setting. Press the ◄ **key** or **MENU/OK button** to select. Press the **MENU/OK button** to confirm and return to the main **Setup** menu.

## 5.5 Getting ready to read a tag

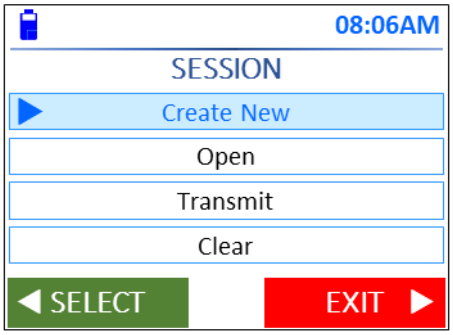
To read tags, a session must be selected. The reader will always default to the prior session used. For a new reader or if all sessions are cleared, it is default to 0001. You can also create a new session or open an existing one to read tags.

### 5.5.1 To create a new session

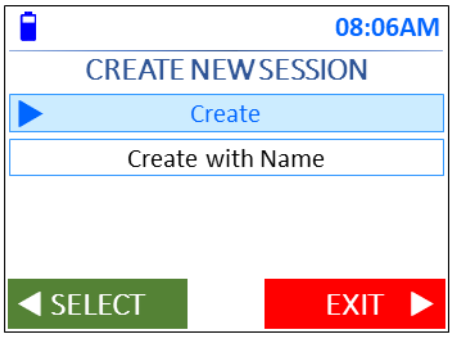
i. In **Main Menu**, use the ▲ ▼ ◄ ► Keys to navigate to **Session** and press the **MENU/OK** button to select.




ii. The **Session** screen appears. Use the ▲ / ▼ **Keys** to navigate to **Create New** and press the ◄ **key** or **MENU/OK button** to create a new session.

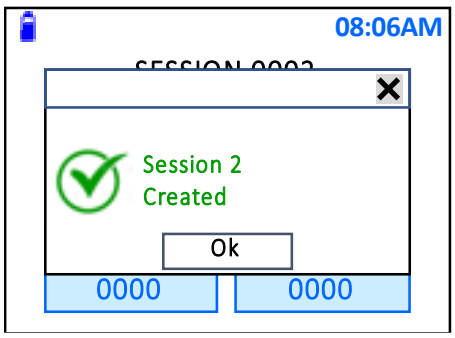


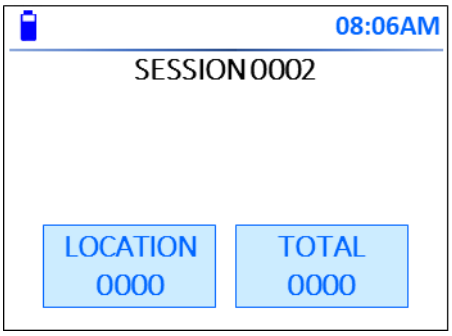

iii. The following screen appears:



There are 2 options to create a new session:

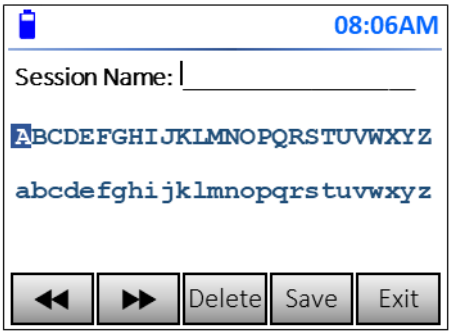
a) **Auto Create** (using a sequential Session Number)
Use the ▲ / ▼ **keys** to navigate to **Create** and press the ◄ **Key** or **MENU/OK button** to select. The reader automatically creates a session number by incrementing the current largest session number. The following confirmation screen is displayed. Press the **MENU/OK button** to confirm and return to the **Session screen**.



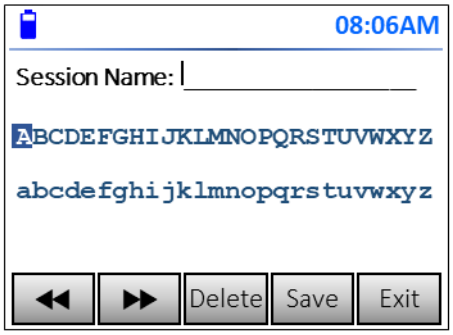



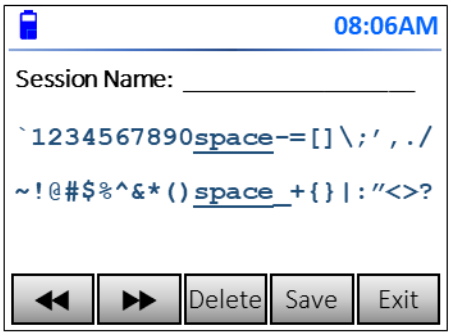

You can now begin to read tags in this session.

b) **Create a Session with Name**
Use the ▲ / ▼ **keys** to navigate to **Create with Name** and press the ◄ **key** or **MENU/OK button** to select. The following screen appears:




Use the ▲ ▼ ◄ ► **Keys** to navigate across or between the rows to the desired character of the session name. Press **MENU/OK button** to select. Repeat for each character. Use the ◀◀ and ▶▶ buttons to toggle between the alphabet and numeric symbol input screens.



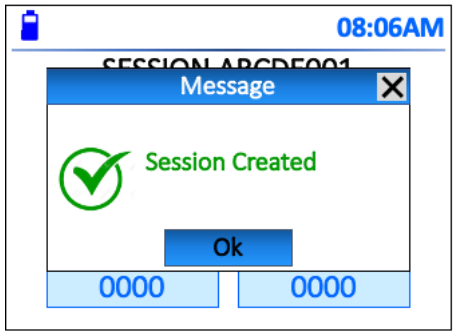
Note: **Session Name** has a maximum length of 15 alpha-numeric digits. Space and special characters cannot be used. If the Session Name contains more than 8 digits, the font size will be reduced so it can be fully displayed on the screen.

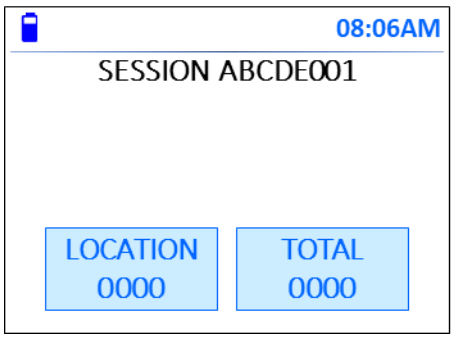
To delete a character, navigate to **Delete** using the ▲ ▼ ◄ ► **Keys** and press the **MENU/OK button** to delete a single character. To delete more characters, continue to press the **MENU/OK button** until all required characters are deleted.

To exit the **Session Name** menu at any time**,** navigate to **Exit** using the ▲ ▼ ◄ ► **Keys** and press **MENU/OK button** to exit and return to the previous screen.

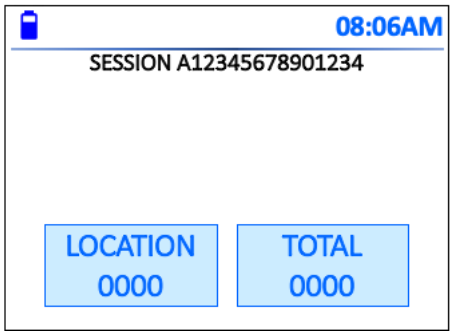
After the session name is entered, navigate to **Save** using the ▲ ▼ ◄ ► keys and press the **MENU/OK button** to select. The following confirmation screen is displayed.

Press the **MENU/OK button** to confirm and return to the **Session screen**.



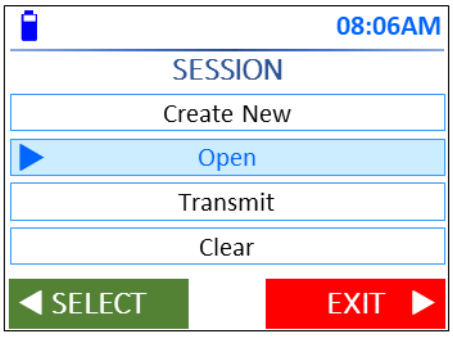

Session Name with 8 or less digits



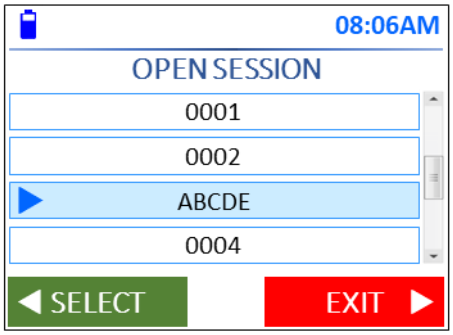

Session Name over 8 digits

### 5.5.2 To open a saved session

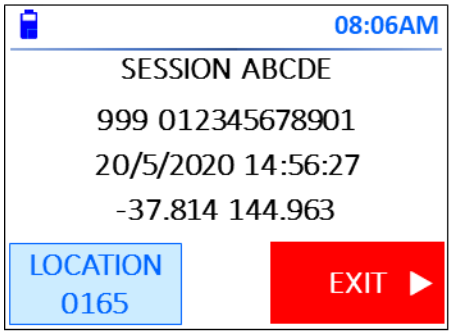
i. In the **Session Menu**, use the ▲ / ▼ **keys** to navigate to **Open**. Press the ◀ **key** or **MENU/OK button** to select.

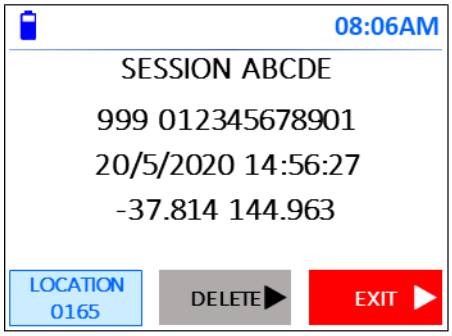



ii. Use the ▲ / ▼ **keys** to navigate to the desired session. If a session name was entered, it will be displayed instead of the session number. Press the ◀ **key** or **MENU/OK button** to select and open the saved session.




iii. The last ID saved in a session is displayed. You can use the ▲ / ▼ **keys** to scroll through the IDs in this session (If the **Read** button is pressed, newly read tags will be saved in the current open session).



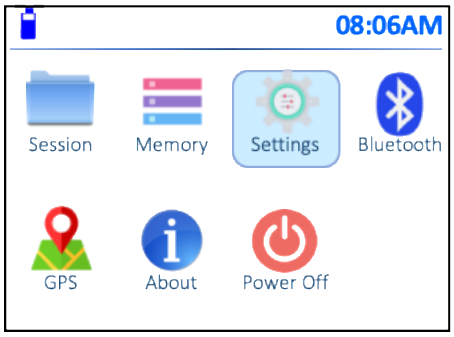




To exit the session, press the ▶ key and the display will revert to the previous **Open Session** menu. Note: Some countries may require the option to delete a read ID. If this function is enabled, press the **MENU/OK button** to delete it.

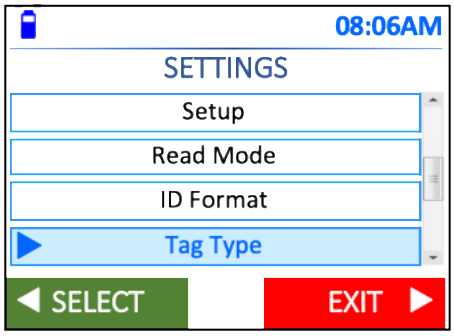
### 5.5.3 Selecting tag type

The reader's default setting is to read animal tags only. If you require the reader to read both animal and industrial tags, you can set it in the **Tag Type** option under the **Settings** menu. See details below.

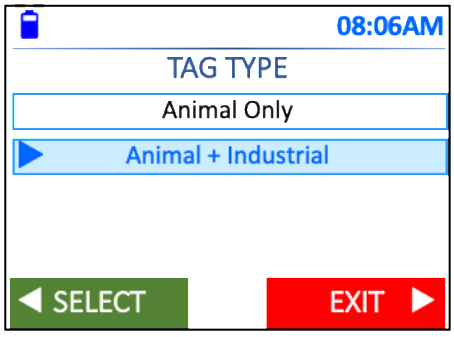
Step 1: Select **Settings** in the Main menu



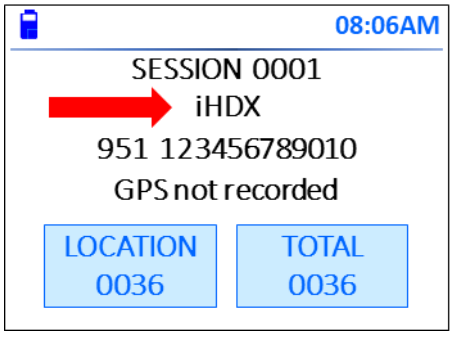

Step 2: Select **Tag Type**



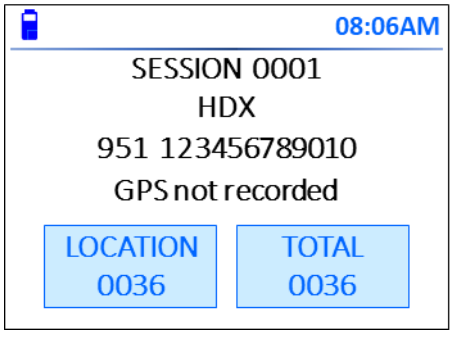

Step 3: Select **Animal + Industrial**




If an industrial tag is read, the prefix "i" will be shown in front of HDX or FDXB.



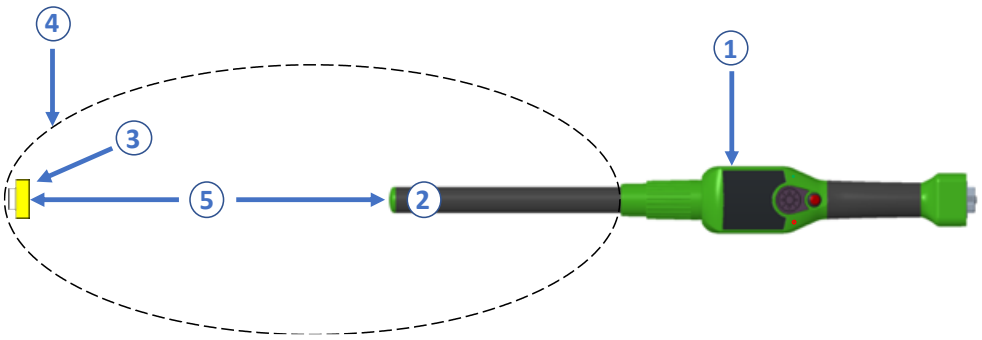

**Industrial Tag**




**Animal Tag**

### 5.5.4 How to read a Tag

The reader can read tags if they are in the proximity of its antenna. See diagram below.




| Item | Legend | Comments |
|---|---|---|
| 1 | GPScanID 100 Series Reader | |
| 2 | Antenna | |
| 3 | RFID Ear Tag | |
| 4 | Reading Zone | Area in which ear tags can be read |
| 5 | Reading Distance | Shows the orientation and maximum distance in which a tag can be read |

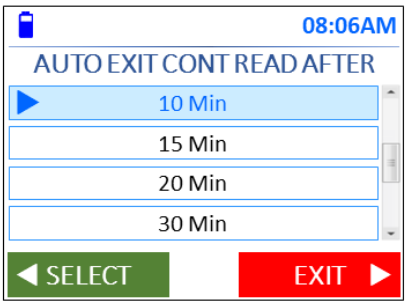
The reader supports 3 read modes:

**Single Mode** – You need to press the **Read button** every time you want to read a tag. The reader attempts to read a tag for 3 seconds. You must press the **Read button** again to read another tag, regardless a tag is read or not. If a tag was not read, a Warning message will be displayed on the screen and the reader will vibrate.

**Continuous Mode** – This mode allows you to read tags continuously after pressing the **Read button**. Reading stops when the **Read button** is pressed again. The reader beeps continuously when reading starts and beeps twice quickly when a tag is read.

If no tag is read after 30 minutes, the reader will automatically exit this mode to conserve power. You can also set this auto exit time in **Settings** -> **Preference** -> **Continuous Read Time**. The options are 10 Min, 15 Min, 20 Min, 30 Min, 45 Min and 60 Min.

Please note the reader will not exit continuous read mode if it keeps reading tags. It will only exit this mode if no tag is read after the auto exit time period.

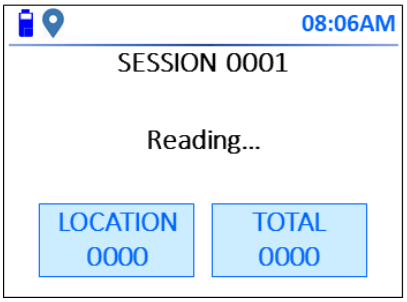



**Auto Mode** – This mode allows you to read one tag one at a time by pressing the **Read button** once quickly or enters **Continuous Read** mode by pressing and holding the **Read button** for more than 1 second. In **Continuous Read** mode, the reader beeps continuously and beeps twice quickly if a tag is read. Reading stops when the **Read button** is pressed again.

You can choose any of the above 3 read modes that best suit your needs. The default factory setting is **Single Read Mode**.

Once the read mode is set, you can create a new session or open a saved session to start reading tags.

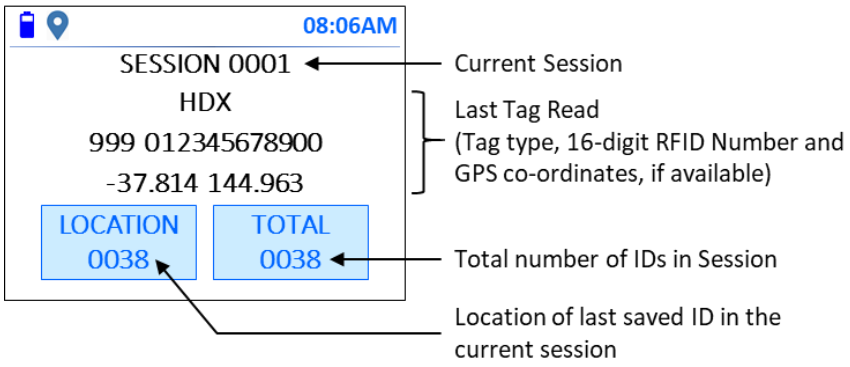
To read a tag, press the **Read button**. The reader beeps once and the following screen is displayed while tags are being read.




Note: GPS is enabled with signal locked in the above screen

**If a valid tag is read**, the following occurs:

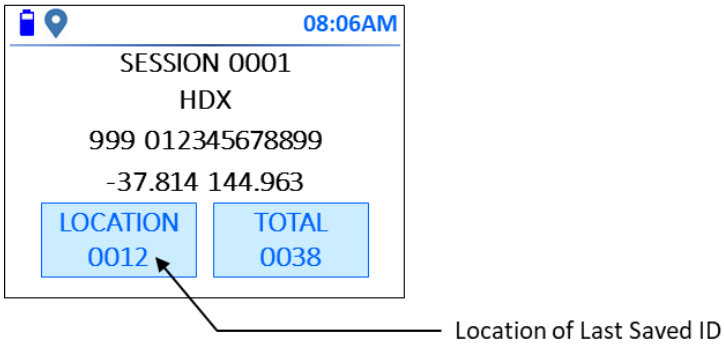
- Backlight of the display lights up;
- The Red LED at the bottom left of the display flashes once and the Green LED at the bottom right flashes twice;
- Reader issues 2 short beeps and 1 short vibrate;
- ID number is displayed and saved into reader memory with timestamp (and, if enabled, GPS location details);
- Both the **Location** and **Total counters** increment by 1 as the tag is read and saved.




Invalid tags are tags with ID that are already saved in the same session (that is, duplicate tags) or tags the reader failed to read.

**If a duplicate tag is read**, the following is shown:

- Backlight of the display lights up;
- The Red LED at the bottom left of the display flashes once followed by one flash of the Green LED at the bottom right;
- Reader issues 1 short beep and 1 short vibrate;
- ID number (and GPS location, if available) is displayed but will not be saved;
- **Location counter** shows the location where the ID was saved previously in the session;
- **Total counter** remains unchanged.



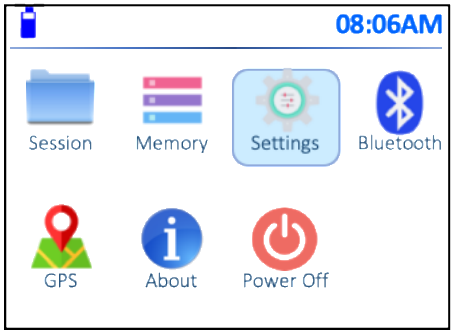

**If no tag is read**, the following is shown:

– Backlight is turned on;
– Red LED stays on for 1 second;
– Reader displays **No Tag Read!;**
– Reader sends 1 long beep and 1 short vibrate;
– Both counters remain unchanged.

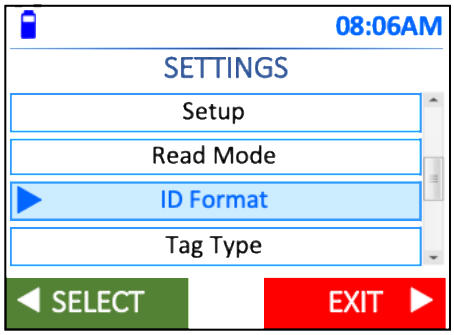
### 5.5.5 Setting Display Format

The reader's default ID display format is 16 digits (with a space after the leading 3-digit country or manufacturer code). You may change the display format to 15 digits (with no space between the digits), ISO or hexadecimal formats in **Display ID Format** under the **Settings** menu. See details below:

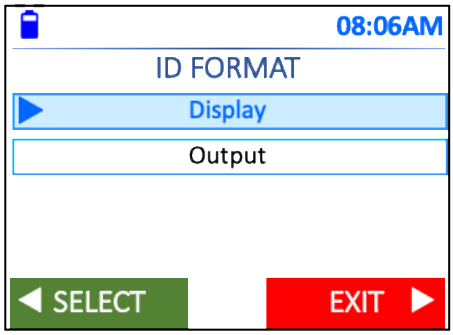
Step 1: Select **Settings** in Main menu



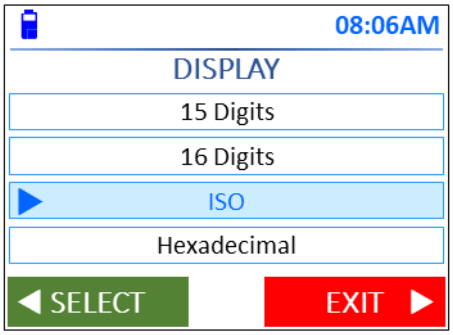

Step 2: Select **ID Format**



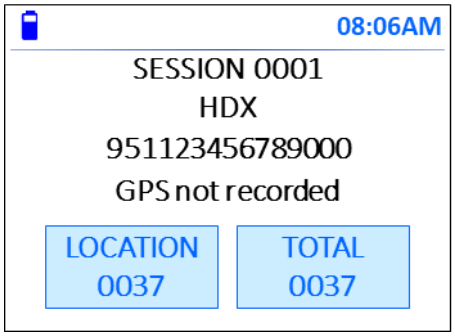

Step 3: Select **Display**



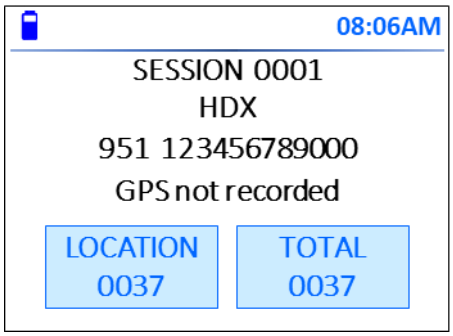

Step 4: Select the desired display format



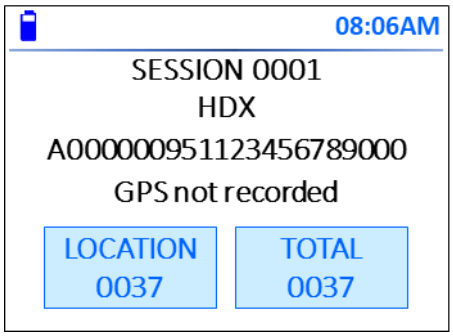
IDs will be displayed in the selected format:



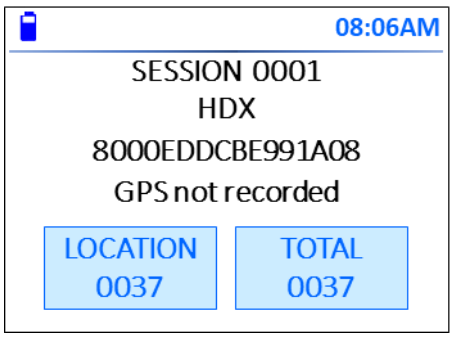

**15 Digits**




**16 Digits**




**ISO**




**Hexadecimal**

### 5.5.6 Clearing a Session

Clearing a Session removes a session from the reader's main memory and makes it inaccessible.

Cleared session and all IDs stored in it are moved to another location of the reader memory. They are not deleted and can be retrieved via the GPScanID Software (supplied with your reader). Please refer to the GPScanID Software Menu for details.

Sessions can be cleared using one of the following 3 ways:

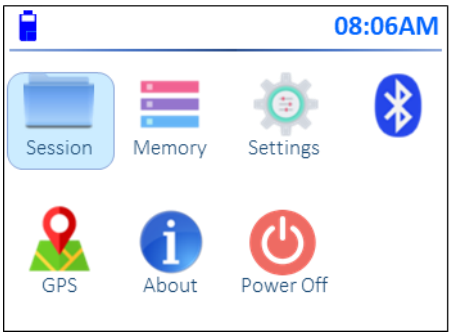
**Clear Current** clears the current Session. A new session (with Session Number one increment from the current largest Session) is automatically created and opened to enable users to read tags continuously.

**Clear Select** allows users to select a Session and clears it individually.

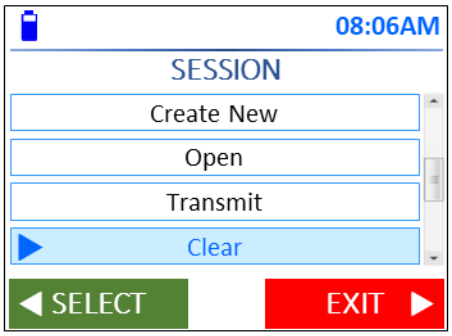
**Clear All** clears all Sessions in the reader. A new Session 0001 will be automatically created and opened to enable users to read tags immediately.

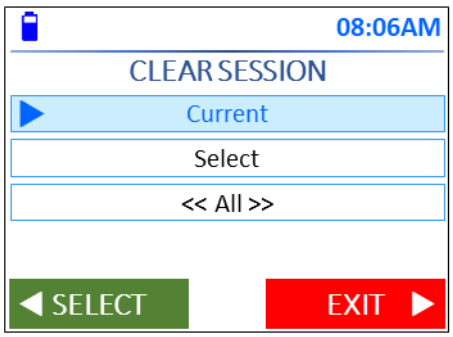
**How to clear a session**

i. In **Main Menu**, use the ▲ ▼ ◄ ► keys to navigate to **Session** and press the **MENU/OK** button to select



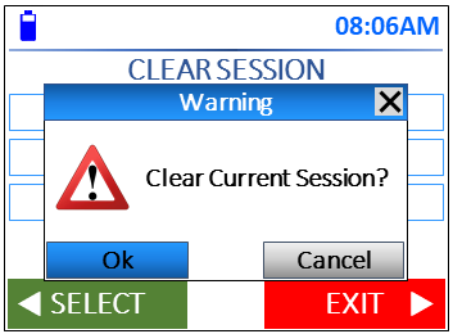

ii. The **Session** screen appears. Navigate to **Clear** and press the ◄ **key** or **MENU/OK button** to select.

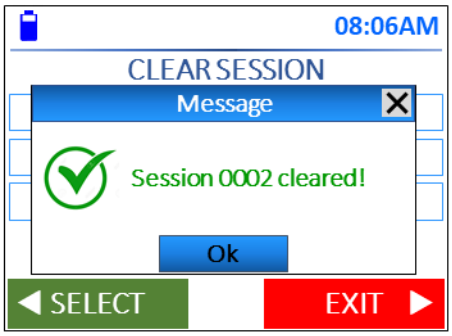


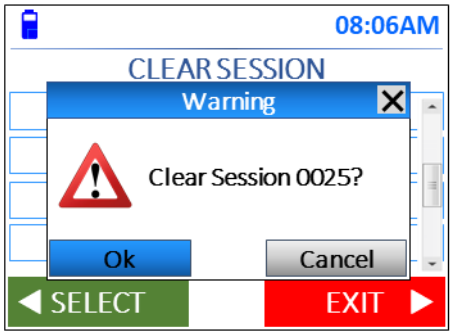

Details for each clearing option are shown below:

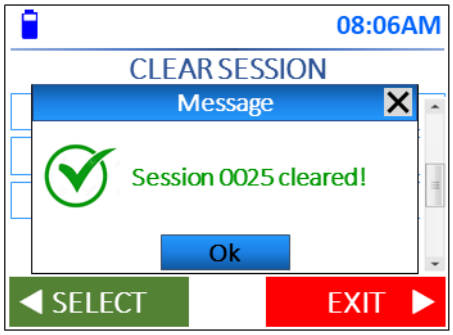
To **Clear the Current Session**, navigate to **Current** then press the ◀ key or the **MENU/OK button**. Use the ◀ ▶ keys to select **OK** then press the **MENU/OK button** to confirm. When the **Session Cleared Message** appears, press the **MENU/OK button** to continue.



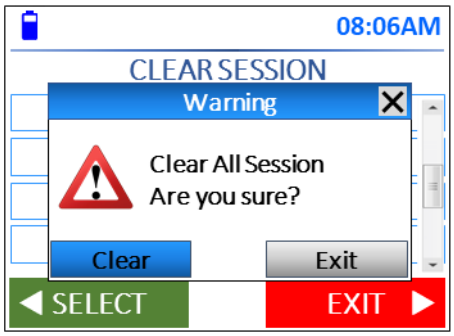



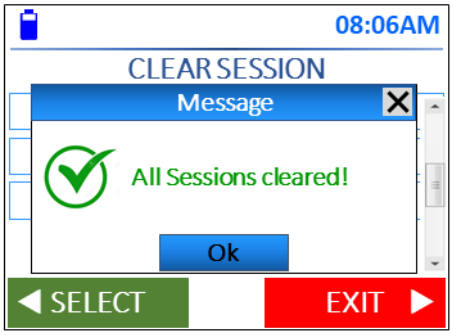

To **Clear a Selected Session**, navigate to **Select** then press the ◀ key or the **MENU/OK button**. Use the ◀ ▶ keys to select **OK** then press the **MENU/OK button** to confirm. When the **Session Cleared Message** appears, press the **MENU/OK button** to continue.



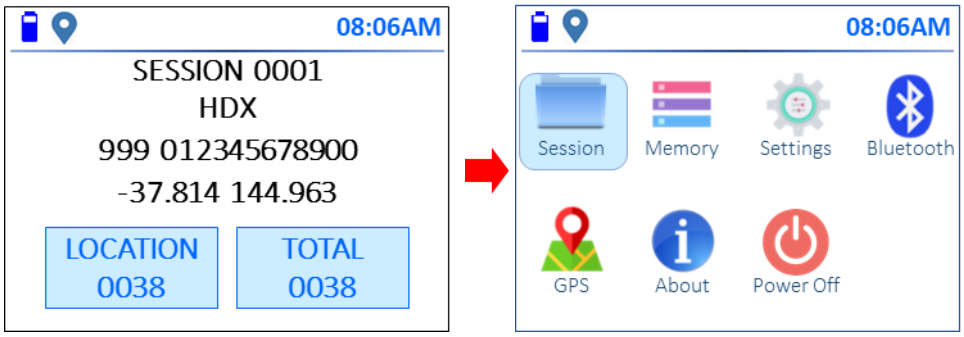

To **Clear All Sessions**, navigate to **<< All >>** then press the ◀ key or the **MENU/OK button**. Use the ◀ ▶ keys to select **Clear** then press the **MENU/OK button** to confirm. When the **All Sessions Cleared Message** appears, press the **MENU/OK button** to continue.



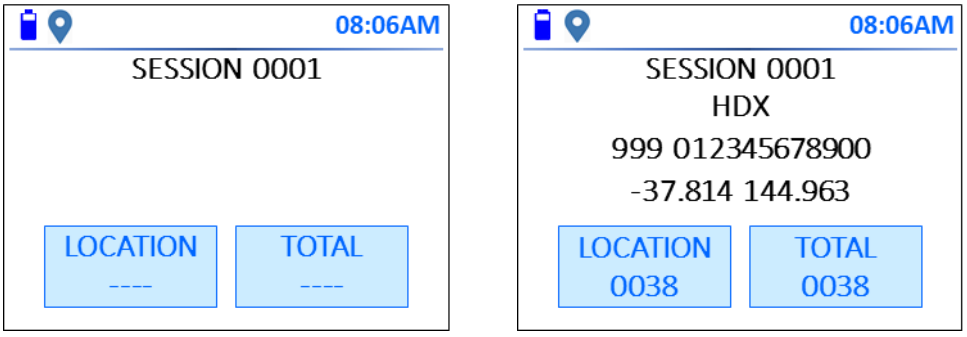



### 5.5.7 Navigating between the Main Menu and Current Read Session Screens

Press the **Menu/OK Button** once to navigate to the **Main Menu** from the current Session.




To return to the current Read Session, press the **Read button**. The following are the Read Session Screens for a brand-new reader and one with previously read ID respectively.




**New Reader** **Existing Session**

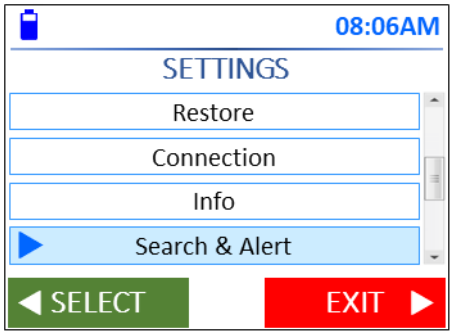
Note: For a previously used reader, you can start reading and saving tag IDs in the last opened session once the reader is turned on.

If you want to save IDs to a new session after turning the reader on, you will need to create a new session. For instructions on how to **Create a new Session**, please refer to Section 5.5.1.

### 5.5.8 Search & Alert

This feature enables users to upload predefined **Search Session(s)** of IDs to the reader, and alerts the user if the read IDs are either present or missing in the Search Session. This feature is built into all GPScanID 150 readers, and GPScanID 100 readers with mainboard firmware version G100_R00A09V04 or later.

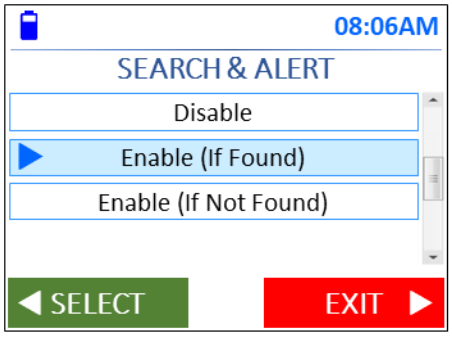
To enable this function, go to the **Settings** menu, then press the ▲ arrow key and select **Search & Alert.**




**Enable (If Found)**: The reader alerts if the read ID is present in the Search Session.

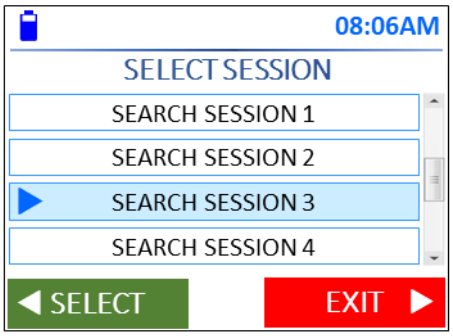
**Enable (If Not Found)**: The reader alerts if the read ID is not present in the Search Session.

The default setting is **Disable**.

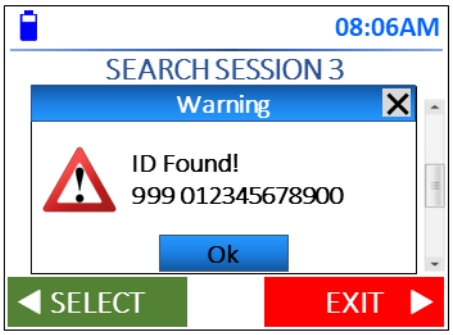



The reader confirms when this function is enabled.

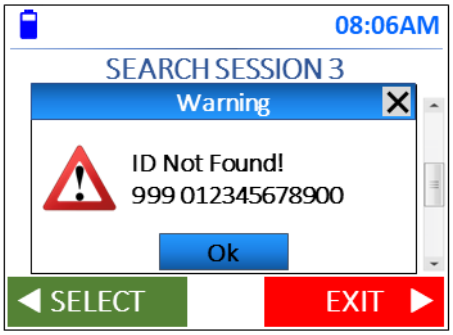
Next, go to the **Session** Menu. Press the ▲ arrow key twice and select the **Search Session** in which the read IDs will be checked against.




Depends on the **Search & Alert** mode selected, the reader provides the following alert if the read ID is present or not present in the **Search Session** respectively.



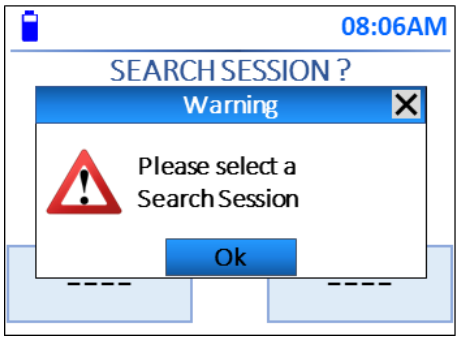

**Enable (If Found)**




**Enable (If Not Found)**

Choose **Disable** under the **Search & Alert** menu to disable this function.

Note: When **Search & Alert** is enabled, the reader will only read tags to check the ID against the selected **Search Session**. Read IDs will not be stored in the reader.
If you try to read a tag with no **Search Session** selected, the reader will alert you to select a **Search Session**. It will not read a tag.




### 5.5.9 Other Functions and Settings

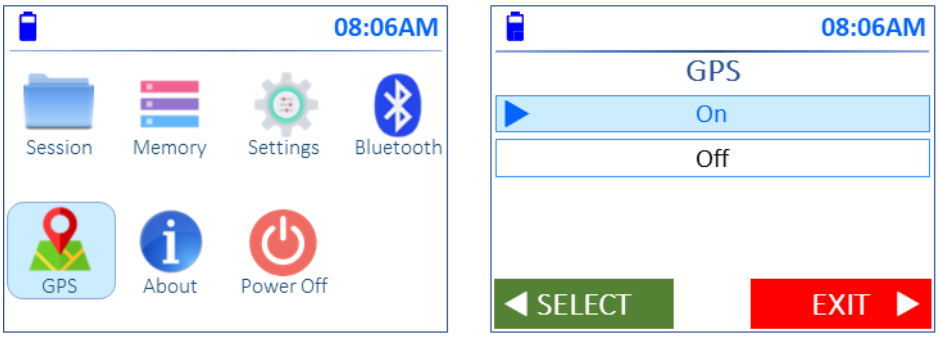
For other reader functions and settings, please refer to the **Menu Tree** details in Section 8.

# 6. Using GPS

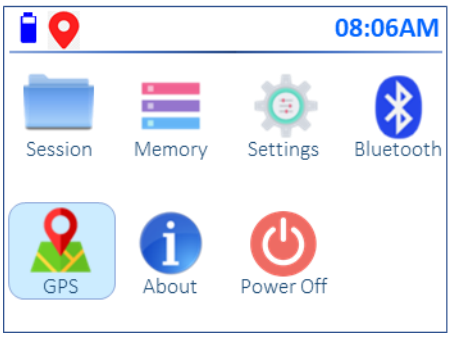
Your reader is equipped with GPS (Global Positioning System) to record the location of the tags during reading. Unlike your smartphone which also uses cellular and/or WiFi base stations to locate the position, the reader solely depends on its build-in GPS antenna to establish connection with the satellites. For optimal GPS performance, it is recommended to enable the GPS function in an open sky environment before commencing to read tags.

## 6.1 Enable GPS

The factory default settings for GPS is 'off'. To enable the GPS function, navigate to the **GPS** icon in the reader **Main Menu** and press the **MENU/OK button**. Choose **On** from the **GPS Menu** then press the ◀ key or **MENU/OK button** to select.

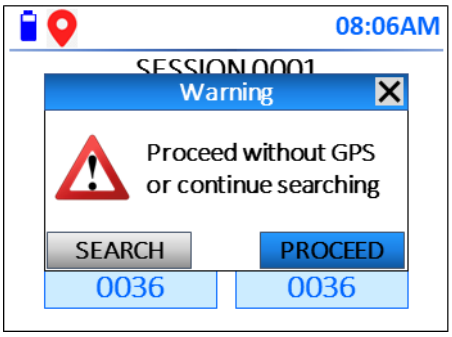



The GPS icon flashes red when trying to locate satellite signals.

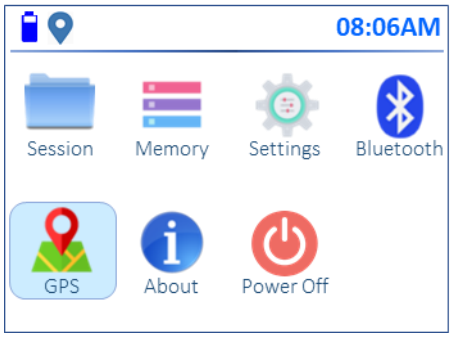



If the reader is unable to lock the GPS satellite signals in 60 seconds, the following warning message is displayed.

The reader will continue to search and lock the GPS signal. If you press the **Read** button now, the reader will display the following warning screen. You can either continue to search the GPS signal for another 60 seconds (select **SEARCH**) or proceed to read tags without GPS (select **PROCEED**).




If GPS signal is located and locked, the GPS icon turns solid blue.




## 6.2 Reading a tag with GPS Location

To read tags with GPS location, the GPS function must be enabled with GPS signal locked.

The following is displayed when a tag is read with GPS co-ordinates.

If GPS signal is lost during reading, the Reader will prompt the user whether to continue searching for GPS or proceed to read tags without GPS per Section 6.1.

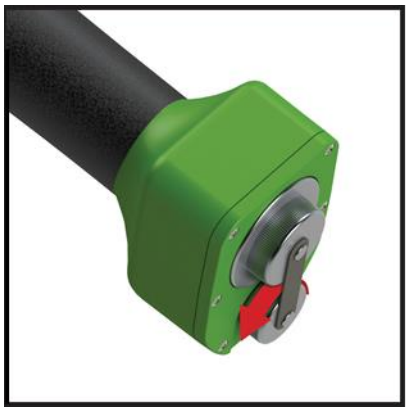
# 7. Connecting with other Devices

## 7.1 Connecting with Personal Computers

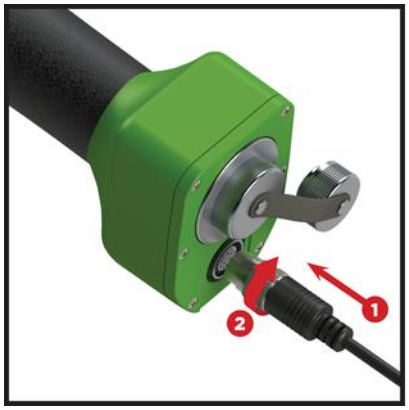
The GPScanID 100 series of readers support both serial and wireless connections (such as RS-232, USB and Bluetooth) with Personal Computers (PC) running Windows 7™, Windows 10™ and Windows 11™ operating systems.

**To connect with a wired connection (RS-232 or USB)**

Turn on both the reader and PC.



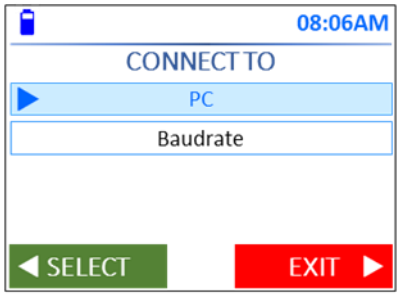
Remove the Data/Charging Cap at the end of the Reader by turning the cap in an anti-clockwise motion.



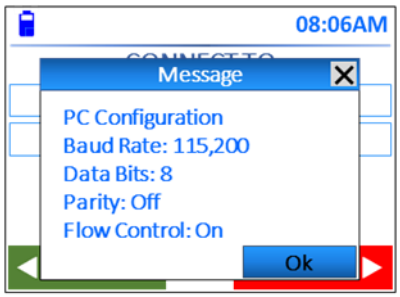

Connect the Data/Charging Cable to the Data/Charging port on the Reader.

Fasten the connector using a clockwise motion to secure it in place.

Connect the other end of the Data/Charging Cable using either RS-232 or USB to the PC.




On the reader, go to **Settings > Connection > Cable > PC** to set the serial connection parameters.



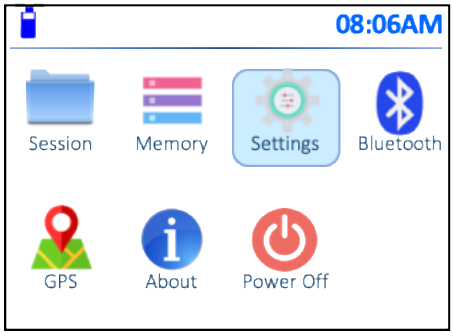

Once serial conection is established, the icon is shown on the reader.

Launch the GPScanID Software on your computer. You can download the latest version from: https://www.GPScanID.com/download/software or via the QR Code

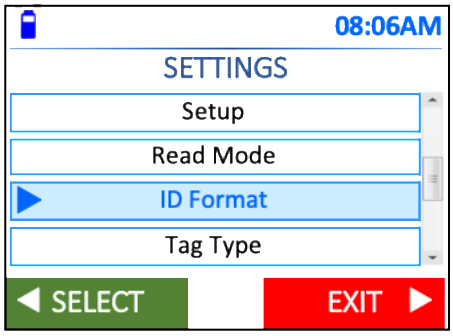
Click the latest Version under **GPScanID Software** to download.

If you are using a third-party herd management software which requires the reader to output IDs in different formats (such as 15 or 16 digits, ISO or hexadecimal), follow the same procedure as section 5.5.5 but select **Output** instead of **Display** in **ID Format** under the **Setting**s menu:

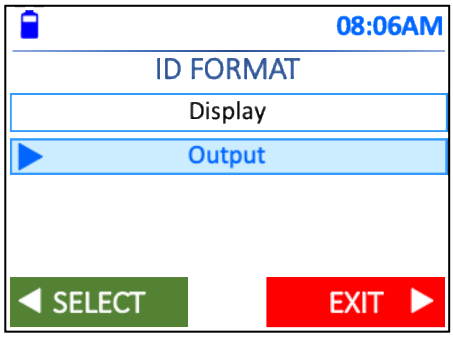
Step 1: Select **Settings** in Main menu



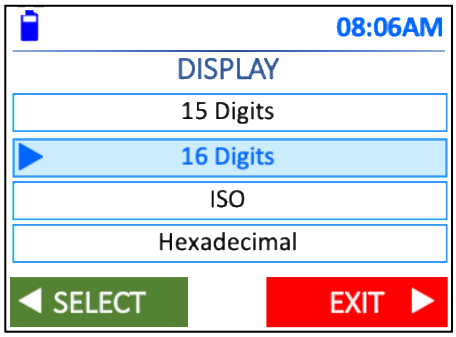

Step 2: Select **ID Format**




Step 3: Select **Output**

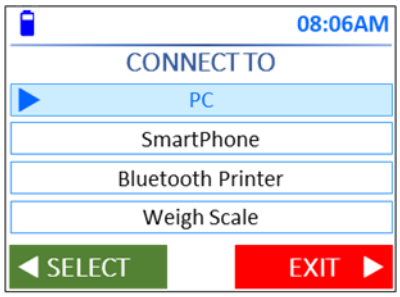



Step 4: Select the desired output format

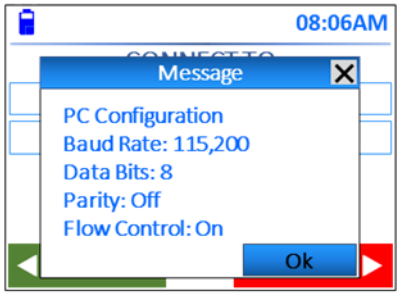


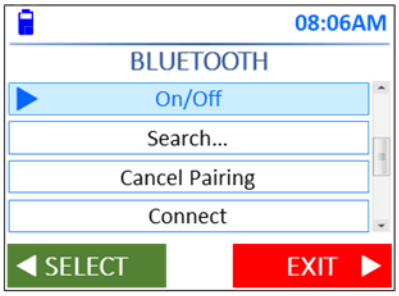
## To connect using Bluetooth connection

Turn on both the reader and Bluetooth enabled PC.

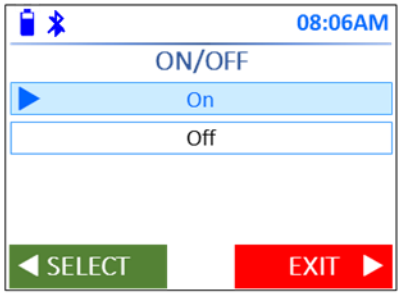


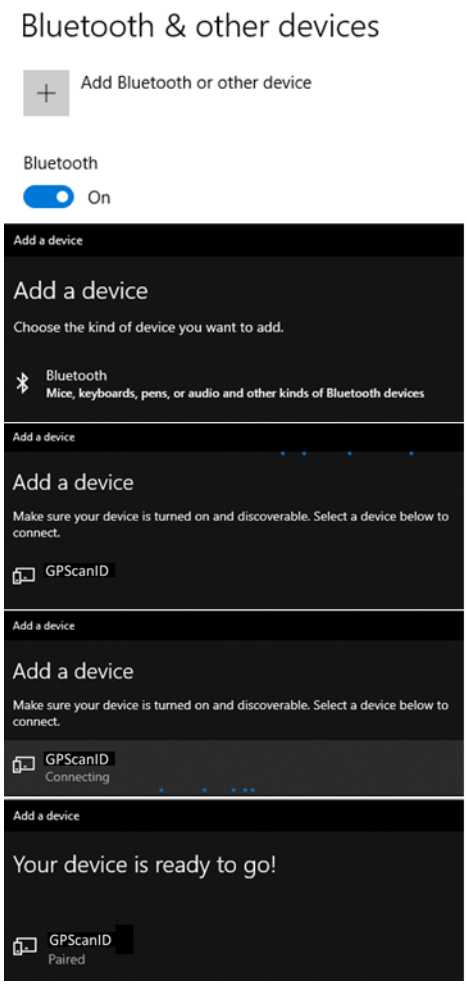

On the reader, go to **Settings > Connection > Bluetooth > PC** to set Bluetooth connection parameters.




Then go to **Bluetooth > On/Off** and select **On** to turn on the Bluetooth function.






On the PC, go to Bluetooth settings and turn on the Bluetooth function. Then select **Add a Bluetooth device** and search for the reader. Once you have identified the Reader, **click on the reader details** to connect/pair with the reader. When connected the PC should identify the reader as being **paired**.

Once paired, open the GPScanID Software on your computer. You can download the latest software from: https://www.GPScanID.com/download/software or via the following QR Code:

Click the latest Version under **GPScanID Software** to download.

The reader can connect and communciate with various types of Bluetooth-enabled peripheral devices including PCs, smartphones, weigh scales and Bluetooth label printers to expand its capabilities.

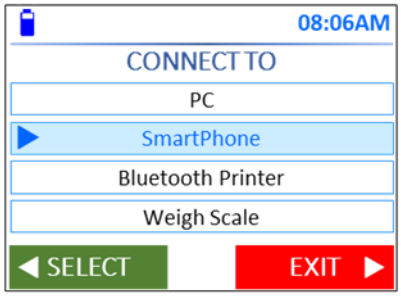
A connection (either serial or wireless) must first be established between the reader and the peripheral device before use. This is confirmed by the icon on the reader. At the time of writing this manual, only Bluetooth is available as wireless connection. WiFi connectivity will be enabled via software updates when it is available.

## 7.2 Connecting with Smartphones

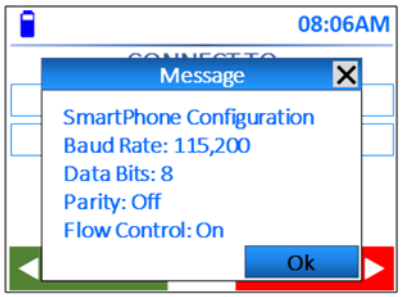
The GPScanID 100 series of readers can connect to iOS and Android Smartphones via Bluetooth through third party APPs.

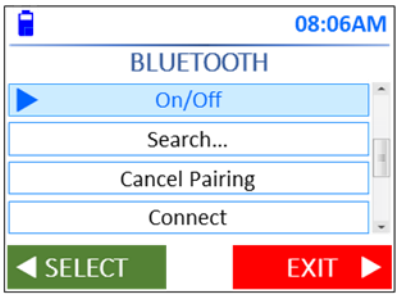
**To establish Bluetooth connection**

Turn on both the reader and Smartphone.

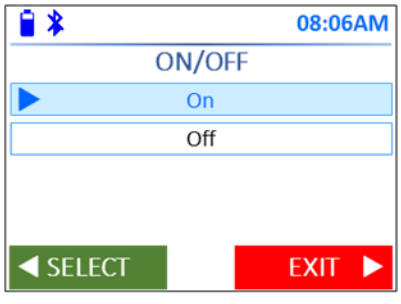


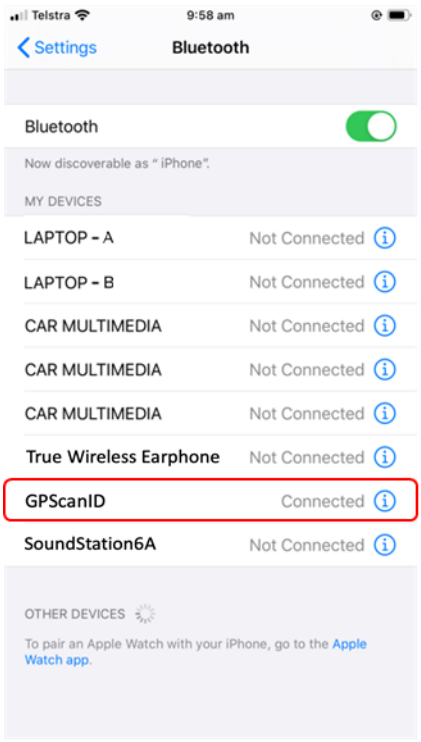

On the reader, go to **Settings > Connection > Bluetooth > SmartPhone** to set Bluetooth connection parameters.




Then go to **Bluetooth > On/Off** and select **On** to turn on the Bluetooth function.






On the SmartPhone, turn on the Bluetooth Function and search for the reader.

If a PIN is required, enter 0000.

On the SmartPhone, open the APP.

Please refer to your APP for further operating instructions.

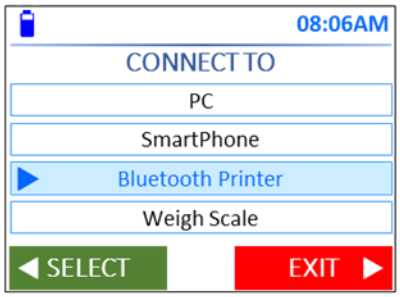
Note: If you are using a third-party APP which requires the reader to output IDs in different formats (such as 15 or 16 digits, ISO or hexadecimal), follow the same procedure as section 5.5.5 but select **Output** instead of **Display** in **ID Format** under the **Setting**s menu.

## 7.3 Connecting with Bluetooth Label Printers

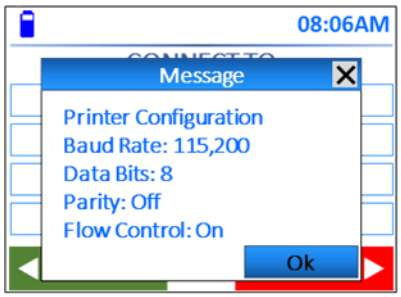
The GPScanID 100 series of readers can connect to Bluetooth label printers.

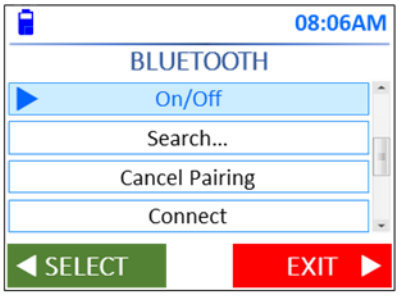
**To establish Bluetooth connection**

Turn on both the reader and label printer.

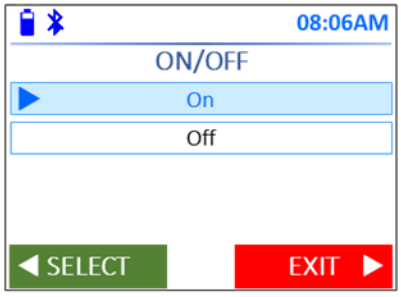



On the reader, go to **Settings > Connection > Bluetooth > Bluetooth Printer** to set Bluetooth connection parameters.

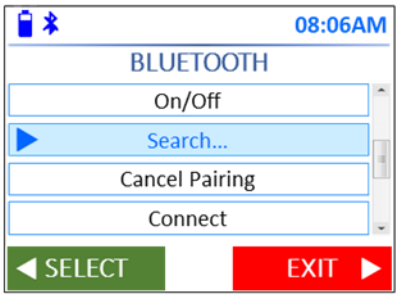



Then go to **Bluetooth > On/Off** and select **On** to turn on the Bluetooth function.



On the label printer, turn on the Bluetooth function (please refer to the Label Printer user manual for further instructions).




On the reader, select **Bluetooth > Search...** to search the label printer.

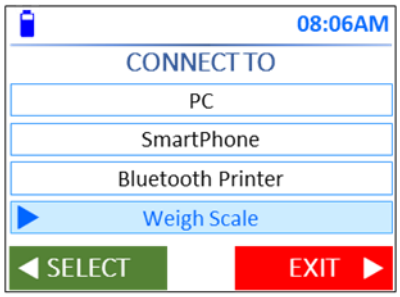
Input the PIN of the label printer, if required, to complete pairing.

## 7.4 Connecting with Weigh Scales

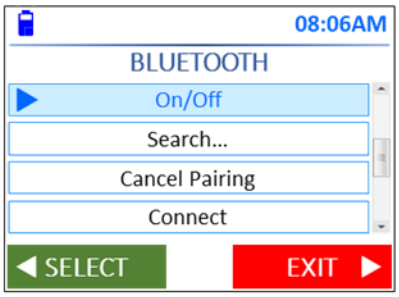
The GPScanID 100 series of readers use Bluetooth to connect with Weigh Scales.

**To establish Bluetooth connection**

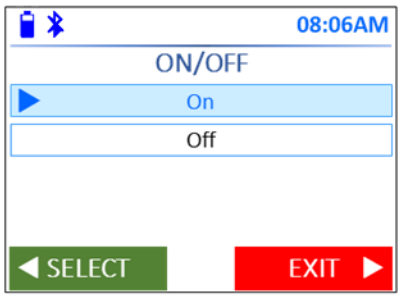
Turn on both the reader and Weigh Scale.



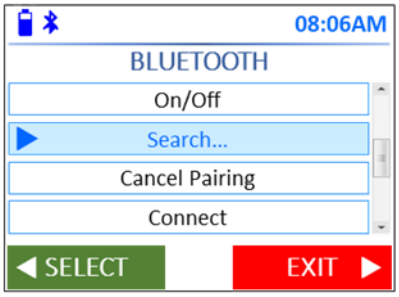

On the reader, go to **Settings > Connection > Bluetooth > Weigh Scale** to set Bluetooth connection parameters.




Then go to **Bluetooth > On/Off** and select **On** to turn on the Bluetooth function.



On the Weigh Scale, turn on the Bluetooth function (please refer to the Weigh Scale user manual for further instructions)




On the reader, select **Bluetooth > Search...** to search the Weigh Scale.

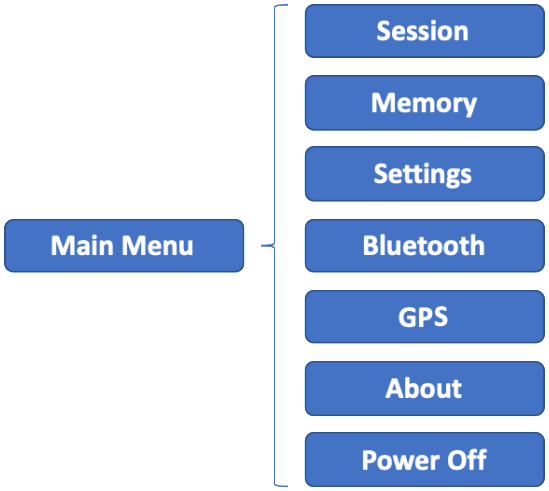
Input the PIN of the Weigh Scale, if required, to complete pairing.

# 8. Menu Tree

## 8.1 Main Menu

The **Main Menu** consists of 7 key functions. Each of them consists of sub-menu items to perform various operations or to adjust settings. The **Menu Trees** are listed in the subsequent sections.

To move between menu options and settings, follow the screen prompts and use the ▲ ▼ ◄ ► **keys** to move between settings on each screen display and press the **MENU/OK button** to select. You can also use the ◄ **/** ► **Keys** to **Select** and **Exit** setting options.

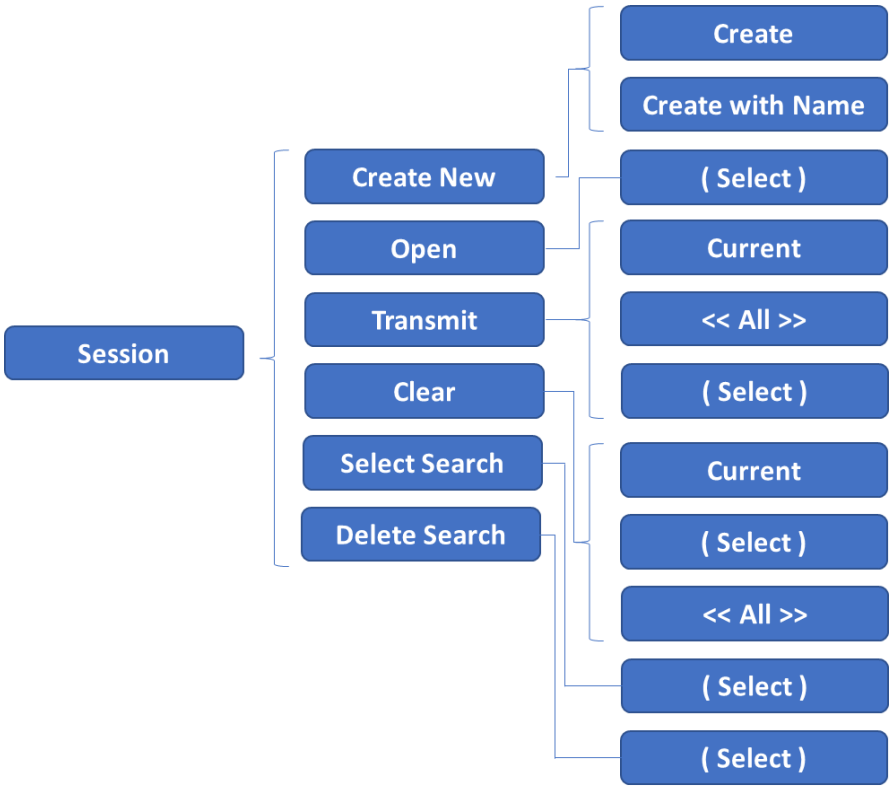



## 8.2 Session Menu

The **Session Menu** allows the user to perform operations regarding creating, opening, transmitting and clearing sessions.

| | |
|---|---|
| **Create New** | Create a new session with automatically assigned session number **(Create)** or a specified session name **(Create with Name)**. |
| **Open** | Open an existing session from the list. |
| **Transmit** | Transmit a specified session or all sessions from the reader to a connected peripheral device (you will need to connect to the peripheral device prior to transmitting). |
| **Clear** | Clear user selected session(s) or all sessions from the reader memory. |
| **Select Search** | Select a Search Session for the **Search & Alert** Function. |
| **Delete Search** | Delete Search Session(s) for the **Search & Alert** Function. |

Please note the **Clear** function will not delete the actual session(s). The session(s) will be moved to a **Recycle Bin** where users can retrieve the cleared session(s) through the GPScanID Software. (See GPScanID Software User Manual for details).

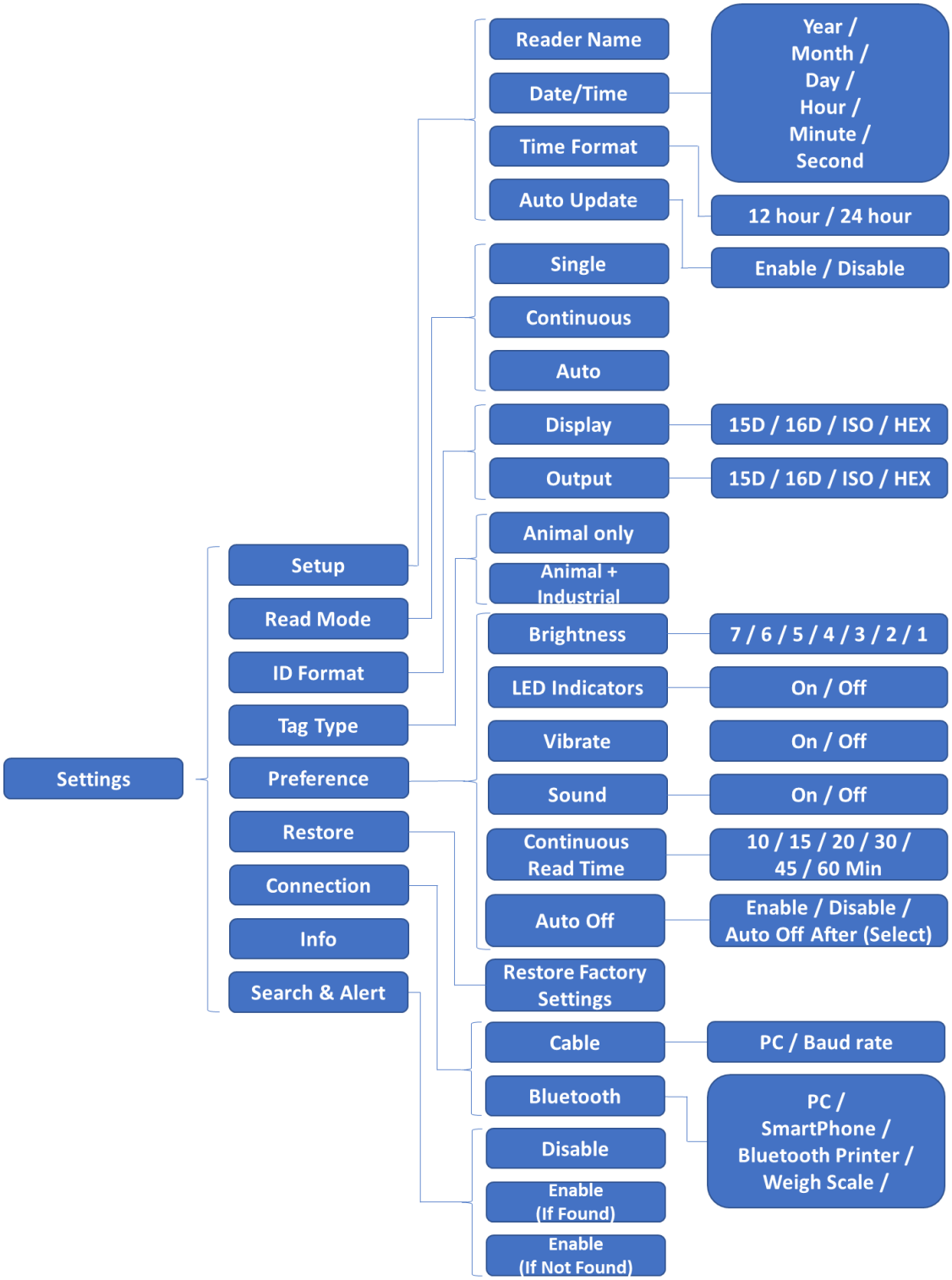



## 8.3 Memory Menu

The **Memory Menu** allows the user to view the status of the reader memory usage by indicating the number of IDs saved, sessions used and overall memory used.

## 8.4 Settings Menu

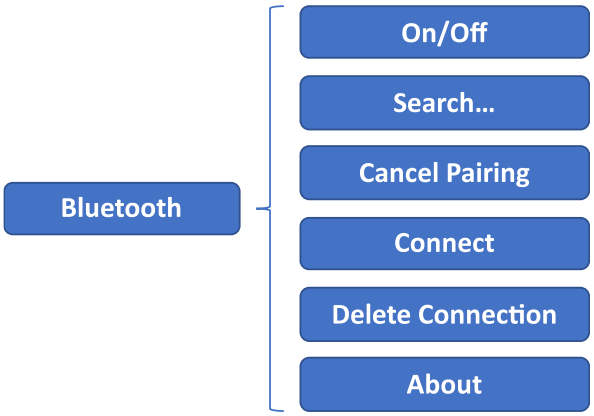
The **Settings Menu** allows the user to customize the parameters in the reader.



| | |
|---|---|
| **Setup** | Initial setup parameters of the reader including Name, Date/Time, Date Format and Auto Update (refer to section 5.4 for detailed instructions). |
| **Read Mode** | Allows you to set the read mode as **Single**, **Continuous** or **Auto**. |
| – **Single mode** | Reads one tag at a time. |
| – **Continuous mode** | Reads tags continuously once the Read button is pressed. |
| – **Auto mode** | Reads one tag at a time or press-and-hold to go to Continuous mode. |
| **ID Format** | Allows you to set display or output format of the ID as 15 digits, 16 digits, ISO or Hexadecimal format. |
| **Tag Type** | Allows you to set the reader to read animals tags only or both animal and industrial tags. |
| **Preference** | Allows you to adjust reader settings such as display brightness, turn LED indicators on / off, turn vibrate on / off, turn sound on / off, setting Continuous Read auto off time, and turn Auto Off on / off (Auto off allows the reader to turn off automatically after a certain period of inactivity). |
| **Restore (Factory Settings**) | Restores the reader to the original factory settings. All recorded Sessions and IDs will not be deleted and remain unchanged in the reader. |
| **Connection** | Use this menu to set up connection parameters with different peripheral devices, including the baud rate. Baud rate is the speed of transmission of data between connected devices. |
| **Info** | Shows the current settings of the reader. |
| **Search & Alert** | Allows you to enable or disable the search & alert function. |

## 8.5 Bluetooth Menu

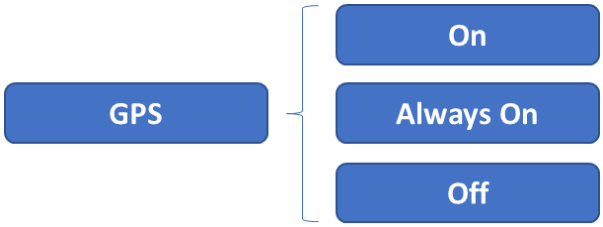
The **Bluetooth Menu** allows the user to modify the settings and operations regarding the Bluetooth functions in the reader.




| | |
|---|---|
| **On/Off** | Turns the reader Bluetooth function on / off. |
| **Search…** | Searches for Bluetooth-enabled peripheral devices in proximity of the reader. |
| **Cancel Pairing** | Disconnects the current connected Bluetooth peripheral device. |
| **Connect** | Shows a list of peripheral Bluetooth device connections previously established with the reader for you to connect to quickly. |
| **Delete Connection** | Shows a list of previously established Bluetooth device connections where the reader is the host device. You can delete previous connections individually or you can delete all previous peripheral devices at once. |
| **About** | Shows information and status about the current Bluetooth connection. |

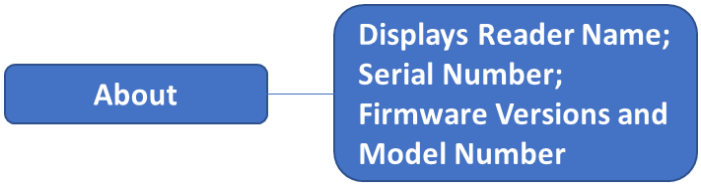
## 8.6 GPS Menu

The **GPS Menu** allows the user to turn the GPS function on or off.




## 8.7 About Menu

The **About Menu** shows the version and model information about the reader.



# 9. Alerts

The reader provides a range of visual, audio and vibration alerts when in use. The following table summarizes the events and the default alerts. You can customize certain settings by enabling or disabling them to suit your preferences.

| **Events** | **Buzzer** | **Display** | **LED Indicators** | **Vibration** |
|---|---|---|---|---|
| Power On | 3 short beeps | GPScanID 1XX Logo with backlight switched on and stays for 3 seconds | Both LEDs stay on until GPScanID logo disappears | 3 short vibrations |
| Power Off | 5 short beeps | Powering Off… is displayed. Screen is dimmed then switched off | Both LEDs stay on until power off | 5 short vibrations |
| Any of the 5 buttons are pressed | 1 short beep | Turns Screen backlit on. Display changes accordingly to button hit response | | |
| Read Button is Pressed | In a session, 1 short beep and starts reading. No beep if in a menu/ setting screen, and returns to the session screen | 1. Session number/Name and Reading… is displayed<br>2. Backlight stays on for 30 seconds then dimmed | Red LED flashes once | |
| No Tag Read | 1 long beep<br>(2 seconds) | No Tag Read! is displayed | Red LED flashes once | 1 short vibration |
| A Valid (Non-Duplicate) Tag is Read | 2 short beeps | 1. Backlight switches on<br>2. RFID number displayed with both counters incremented | Red LED flashes once and Green LED flashes twice | 1 short vibration |
| Duplicate Tag is Read | 1 short beep | 1. Backlight switches on<br>2. RFID number displayed. Left counter shows location of ID already saved. Right counter remains unchanged | Red LED flashes once then Green LED flashes once | 1 short vibration |
| Restore Factory Settings | 1 long beep<br>(3 seconds) | 'Resetting…' is displayed for 3 seconds then screen is turned off momentarily before displaying the last session used | Both LED stays on for 3 seconds | 1 long vibration<br>(3 seconds) |
| Connection Lost<br>(Serial or Bluetooth connection lost or failed during data transfer) | 1 long beep<br>(2 seconds) | Connection icon disappears | Red LED flashes twice | |
| Memory Almost Full (>90% used) | 1 short beep | Memory Almost Full is displayed | Red LED flashes twice every 15 minutes | |
| Memory Full | 1 long beep<br>(2 seconds) | Memory Full is displayed | Red LED stays on 2 seconds every 15 minutes | |
| Charging Battery | 1 short beep when charging starts | Turn backlight on for 1 minute. Battery Indicator flashes with battery level and shows adjacent lightning icon | Red LED stays on | |
| Low Battery (when battery level falls below 10%) | 1 short beep | Battery Low is displayed 1 second once every 5 minutes | Red LED flashes twice | |
| Sending session(s) during data transfer | 1 short beep when completed | Sending… | Red LED flashes once | |
| Receiving session(s) during data transfer | 1 short beep when completed | Receiving… | Red LED flashes once | |

# 10. Specifications

| **General Features** | |
|---|---|
| Norms | ISO 11784 and full ISO 11785 for FDX-B and HDX tags<br>IP67 Rated Dust and Water proof<br>Rechargeable Lithium battery and cap screwed onto connector |
| User Interface | 2.4" 320x240 Color TFT LCD Graphical display<br>5-way Key and Read Button<br>Buzzer, LED Indicators and Vibrator<br>Serial port, USB port, Bluetooth and WiFi Module (WiFi to be enabled) |
| USB Interface | CDC class (Serial Emulation) and HID class |
| Bluetooth Interface | GPScanID 100: Dual mode Class 1, Class 4.2 Low-Energy, Serial Port Profile (SPP)<br>GPScanID 150: Dual model Class 1, Class 5.3 Low Energy, Serial Port Profile (SPP) |
| Serial Interface | RS-232 (115200N81 by default) |
| Memory | Store up to 175,000 animals ID with a maximum of 1,000 sessions and up to 4,000 IDs per session |
| Input Voltage | 12V |
| Battery | 7.4VDC 2900mAh rechargeable Lithium-Ion (Removable) |
| Battery Charge Duration | 2.5 hours to full charge when charging in reader **<br>** Actual charging time depends on ambient temperature. High temperature increases charging time. |

| **Mechanical Specifications** | |
|---|---|
| Dimensions<br>(GPScanID 100 Reader) | 993 x 79 x 109 mm (39.1 x 3.1 x 4.3 in) with 60cm Antenna<br>643 x 79 x 109 mm (25.3 x 3.1 x 4.3 in) with 25cm Antenna |
| Weight<br>(GPScanID 100 Reader) | 1.29kg with 60cm Antenna<br>1.11kg with 25cm Antenna |
| Dimensions<br>(GPScanID 150) Reader | 993 x 79 x 109 mm (39.1 x 3.1 x 4.3 in) with 60cm Antenna<br>643 x 79 x 109 mm (25.3 x 3.1 x 4.3 in) with 25cm Antenna |
| Weight<br>(GPScanID 150 Reader) | 1.18kg with 60cm Antenna<br>1.02kg with 25cm Antenna |
| Ingress Protection Rating | IP 67 |
| Operating Temperature | -20°C to +60°C (-4°F to +140°F) |
| Storage Temperature | -40°C to +85°C (-40°F to +185°F) |
| Humidity | 0% to 80% |

| **Performance** | |
|---|---|
| HDX Reading Distance | Above 50cm |
| FDX-B Reading Distance | Above 25cm |
| GPS Accuracy | < 3.5 meters radius |

# 11. Factory Default Settings

The following table lists all default factory settings and parameters. You can change them to suit your individual needs by selecting **Settings** -> **Setup** / **Read Mode** / **Preference**, **Bluetooth Menu**, or the **GPS Menu** in the reader.

| Settings/Parameters | Factory Default |
|---|---|
| Reader Name | GPScanID 1XX † |
| Time Format | 12 hour |
| Auto Update | Disable |
| Read Mode | Single |
| Search & Alert | Disable |
| Preference – ID Format Display | 16 Digits |
| Preference – ID Format Output | 16 Digits |
| Preference – Tag Type | Animal Only |
| Preference – Brightness | 4 |
| Preference – LED Indicators | On |
| Preference – Vibrate | On |
| Preference – Sound | On |
| Preference – Auto Exit Continuous Read Mode | 30 Minutes (if no tags are read) |
| Preference – Auto Off | Enabled (Auto-Off after 10 minutes) |
| Preference – Search & Alert | Disable |
| Bluetooth | Off |
| GPS | Off |

† 1XX is the Reader model number. Once the Reader Name is changed, it is limited to 8-alphanumeric digits, excluding symbols.

# 12. Frequently Asked Questions

| Issue | Possible Cause(s) | Remedial Action(s) |
|---|---|---|
| Reader won't turn on | • Read button has not been held long enough to turn the reader on.<br>• Reader has no battery, or the battery is flat.<br>• Reader firmware is corrupted. | • Press Read button and hold for 2-3 seconds.<br>• Check if battery is inserted properly.<br>• Ensure battery is charged.<br>• Replace battery if necessary.<br>• Reinstall the firmware (see GPScanID Software manual for details) |
| Reader not reading tags | • Detachable antenna is not inserted properly.<br>• Antenna is broken.<br>• Memory is full. | • Check if antenna is connected properly in the reader.<br>• Try reading different tags. If problem persists, contact your distributors for technical assistance or purchase a replacement antenna.<br>• Back up reader memory then erase it to free up storage space. |
| Reading distance is reduced | • Antenna may be damaged. | • Try reading different tags. If problem persists, contact your distributors for technical assistance or purchase a replacement antenna. |
| Reader is 'frozen' and not responding to input | • Possible software clashes.<br>• Firmware is corrupted. | • Force reset the reader by removing and replacing the battery, then power it on again.<br>• Try reinstall the reader firmware.<br>• Contact your distributor for technical assistance if problem persists. |
| Reader not charging | • Data/Charging cable and charger not connected properly.<br>• Charger not connected properly to cable or power outlet.<br>• Power outlet is not turned on. | • Check connections between data/charging cable, charger, and reader are connected properly.<br>• Ensure plug connector is secured properly in the charger.<br>• Make sure charger is plugged into power outlet and power is turned on. |
| Reader clock reset to 12:00AM when powered on | • Backup battery is not charged properly. | • Connect the reader (with battery inside) to the charger via the cable. Charge for at least 2 hours to ensure backup battery is fully charged, even if main battery is full. Do not remove the main battery. |

# 13. Regulatory

**USA – FCC (FCC ID: YQD-GPSCANID100, YQD-GPSCANID150)**

**Information to the user (FCC Part 15.107 and 15.109)**

This equipment has been tested and determined to be compliant within the Equipment Under Test (EUT) limits with FCC Part 15C Spread Spectrum Transmitter, Digital Transmission System, and Low Power Communication Device Transmitter for conducted and radiated emissions. 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 an 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:

- Re-orient 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 assistance.

**Modification warning (FCC Part 15.21)**

Warning: Any changes or modifications not expressively approved by GPScanID Limited could void the user's authority to operate this equipment.

**Europe CE (CE ID: B200721, BALU600-EU)**

This device has been tested and meets the Electromagnetic Compatibility requirements for **EN 301 489-1 §8.2, §8.4, §8.6, §8.7, §9.2, §9.3, §9.4, §9.5, §9.7, §9.8.**

**Australia and New Zealand - RCM**

This device has been tested and meets the Electromagnetic Compatibility requirements for **AS/NZS CISPR 32:2015 Rules A.2 and A.3.**

**Antenna Warning**

The GPScanID 100 Series readers has been designed and is only approved to operate with the antennas listed below. In accordance with RSS-GEN Issue **2 June 2019 Section 7.1.4 and FCC Part 15.21**, antennas not included in this list are strictly prohibited for use with this device.

| Reader Model | Antenna Model | Antenna Housing Length | Antenna Description |
|---|---|---|---|
| GPScanID 100 | GPS100-Wand25 | 25cm | 190mm Ferrite Rod Antenna |
| GPScanID 100 | GPS100-Wand60 | 60cm | 190mm Ferrite Rod Antenna |
| GPScanID 150 | GPS150-Wand25 | 25cm | 100mm Ferrite Rod Antenna |
| GPScanID 150 | GPS150-Wand60 | 60cm | 100mm Ferrite Rod Antenna |

* Antenna for GPScanID 100 and 150 Readers are not compatible.

# 14. Product Codes and Accessories

**GPScanID 150 Reader Set and Accessories:**

| Product Code | Product Description |
|---|---|
| GPS150P25 | GPScanID 150 Reader Standard Pack with 25cm Antenna |
| GPS150-Wand25 | GPScanID 150 25cm Antenna |
| GPS150-Wand60 | GPScanID 150 60cm Antenna |
| GPS150-Battery | GPScanID 150 Battery |
| GPS150-Charger | GPScanID 150 Battery Charger with US, UK, EU and Australian Adapters |
| GPS150-LighterCharger | GPScanID 150 Cigarette Lighter Charger |
| GPS150-Dock | GPScanID 150 Charging Dock |
| GPS150-Cable | GPScanID 150 1.5meter Data/Charging Cable (Windows 11 Ready) |
| GPS150-Collar | GPScanID 150 Locking Collar |
| GPS150-Cap | GPScanID 150 Battery and Data Charging Cap with Belt |
| GPS150-Case | GPScanID 150 Black Plastic Carrying Case |

**GPScanID 100 Reader Set and Accessories:**

| Product Code | Product Description |
|---|---|
| GPS100P25 | GPScanID 100 Reader Standard Pack with 25cm Antenna |
| GPS100-Wand25 | GPScanID 100 25cm Antenna |
| GPS100-Wand60 | GPScanID 100 60cm Antenna |
| GPS100-Battery | GPScanID 100 Battery |
| GPS100-Charger | GPScanID 100 Battery Charger with US, UK, EU and Australian Adapters |
| GPS100-LighterCharger | GPScanID 100 Cigarette Lighter Charger |
| GPS100-Dock | GPScanID 100 Charging Dock |
| GPS100-Cable | GPScanID 100 1.5meter Data/Charging Cable (Windows 11 Ready) |
| GPS100-Collar | GPScanID 100 Locking Collar |
| GPS100-Cap | GPScanID 100 Battery and Data Charging Cap with Belt |
| GPS100-Case | GPScanID 100 Black Plastic Carrying Case |

** Antenna for GPScanID 100 and 150 readers are not compatible

# 15. Warranty

Manufacturer guarantees this product against all defects due to faulty materials or workmanship for a period of 12 months from the date of purchase. Please register your reader on our website (https://www.GPScanID.com/registration) within 14 days after the purchase or delivery date, whichever is later, for warranty to take effect. You also need to keep your original invoice and/or delivery note as proof of purchase.

The warranty does not apply to any damage resulting from an accident, misuse, disassembling the unit, modification and/or an application other than that described in this user manual and/or for which the device was designed to operate.

If the product malfunctions during the warranty period, the manufacturer will repair or replace it free of charge. Customer is responsible for the shipment costs to return the reader for replacement or repair. The Manufacturer is responsible for the return shipment costs.

Please refer all servicing to the Manufacturers approved and qualified technical service personnel only. Servicing is required when the reader has been damaged in any way, including but not limited to, the power supply, data/charging cable, data/charging plugs or connectors, liquid spills or foreign objects penetrating inside the equipment, or if the unit is exposed to extreme temperatures or excessive mechanical stress.

# 16. Distribution

GPScanID Limited has appointed Leaders Products® to be the distributor in Australia and New Zealand.

| **Australia** | **New Zealand** |
|---|---|
| Leader Products Pty Ltd<br>465 Hume Highway<br>Craigieburn VIC 3064<br><br>Web: www.leaderproducts.com<br>Email: sales.orders@leaderproducts.com.au<br>Phone: +61 3 8339 9000 | Leader Products Pty Ltd<br>Unit B/22 Tarndale Grove<br>Rosedale 0632, Auckland<br><br>Web: www.leaderproducts.com<br>Email: sales@leaderproducts.co.nz<br>Phone: +64 9 444 6180 |