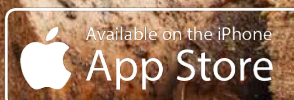# *HITMAN HM220i*
Cloud and Sync App

USER OPERATION GUIDE

fibre-gen

1. CONTENTS

1. INTRODUCING HITMAN CLOUD AND SYNC APP

The Hitman Cloud and Sync App have been created to enable your HM220i Log Files to sync securely with your connected forest management platform. The Hitman Sync App also allows easy management of your HM220i tool settings and configurations. This User Operation Guide explains how to install and use the Sync App to connect and share your Log Files.

The Hitman Sync App can be downloaded from Google Play and Apple Stores and opened on your mobile device. Sync App and Cloud API keys will be supplied with your subscription to enable you to access the Tool Settings and upload and send Log files from your mobile device.

Your Hitman Cloud Service subscription can be applied for by emailing info@fibre-gen.com.

2. GETTING STARTED

Once you have received your Hitman Cloud Services package by email from Fibre-gen there are several key steps required to set up your HM220i tool to connect with your mobile device:

1. Download the HM220i Sync App to your device from Google Play or Apple Stores
2. Upgrade the HM220i firmware on your tool (see section 2.1)
3. Open the Sync App, tap Tool Settings and input your specific API keys to activate your Bluetooth connection

2.1. HM220i TOOL FIRMWARE UPGRADE

A firmware upgrade may be required to enable Bluetooth functionality on your HM220i tool (unless your tool has been supplied enabled). Fibre-gen will send you a new firmware version to update your HM220i tool (see Figure 2).

To update HM220i firmware follow these steps:

- **ENSURE THE HM220i TOOL IS SWITCHED OFF**
- **REMOVE THE BATTERY COVER AND CONNECT THE USB CABLE TO THE CONNECTOR ADJACENT TO THE BATTERY**
- **INSERT THE USB CABLE INTO YOUR PC WHILE HOLDING DOWN THE HM220i TOOL KEYS '3' AND '7'**
- **A REMOVABLE DRIVE NAMED "FGL HM220IFW" WILL APPEAR IN YOUR PC DIRECTORY**
- **DRAG AND DROP THE FIRMWARE FILE SUPPLIED INTO THE FGL HM220i FW FOLDER**
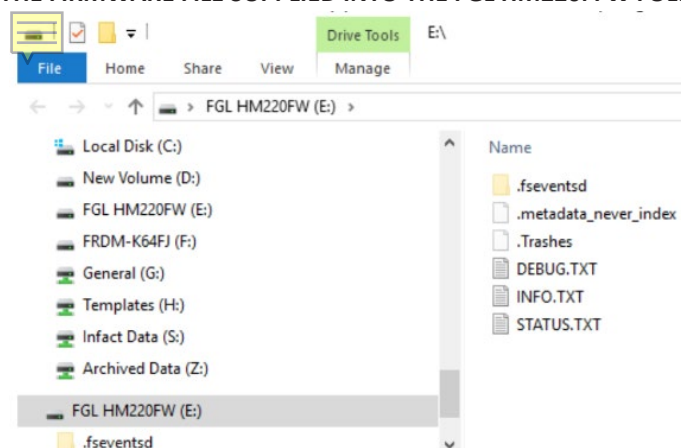
Figure 2: HM220i Tool appears as a Mass Storage Device

Note: The 'FGL HM220i FW' drive will disappear from the directory once the firmware is updated to the HM220i memory. The HM220i will automatically reboot. See section 3.1 to enable the Bluetooth function.

2.2.   SETUP API KEYS

There are two types of API keys:

- Cloud API Keys: These are supplied by Fibre-gen and you input these in the Sync App to connect

- HM220i Tool Keys: These are stored in the cloud and are synced to App.

Fibre-gen will assign the HM220i Tool key to all the HM220i tools owned by each customer and sync this to each mobile device loaded with the Cloud API keys provided. Each customer can then use all of their HM220i tools from their App.

There are two different API key setup types for interacting with the Fibre-gen cloud:

2.2.1. DEVICE SYNC APP API KEY

To enter the Sync App API keys tap the Settings icon in the top right corner of the "Hitman Tools" home page and open the "App Settings" page. Input the "Public" and "Private" keys to the relevant section (see Figure 3). These keys are provided by Fibre-gen.

- **OPEN THE APP**
- **CLICK THE SETTINGS ICON AT THE TOP OF THE PAGE**
- **ENTER APPROPRIATE API KEY(S)**
- **CLICK "SAVE KEYS"**
- **CLICK "BACK" BUTTON**
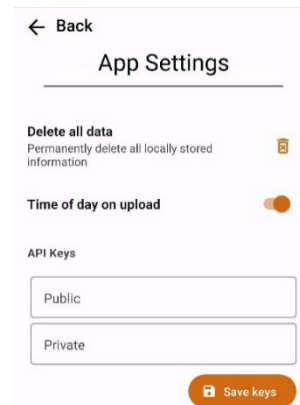
Figure 3: App Settings Page

2.2.2. HITMAN CLOUD API KEY

The Hitman Cloud API key provides access to the Hitman Cloud allowing you to access JSON data by specific HM220i tool serial number. API Keys are provided by Fibre-Gen.

2.3.   DELETE LOG FILES FROM THE SYNC APP

Once you're up and running with the App you can "Delete all data" if required. This provides users a way to delete all Log files stored on your device in the Sync App. This will also delete the API Keys which would need to be reloaded into the App.
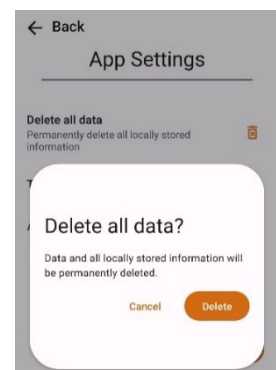
Figure 4: Deleting Log Files

Note: Log files already uploaded from the Sync App to the Hitman Cloud or those Log files not deleted from the HM220i tool itself will not be deleted during this process. Only the data on your device will be deleted.

2.4.   'TIME OF DAY' TIMESTAMP SETTING

"Time-of-day" timestamp applied to each log record can be removed from Log files saved in the Sync App before they are uploaded to the Hitman Cloud or emailed via the Sync App.

- Enter the Sync App settings by tapping the Settings icon in the top right corner.
- Toggle "Time of day on upload" On or Off.
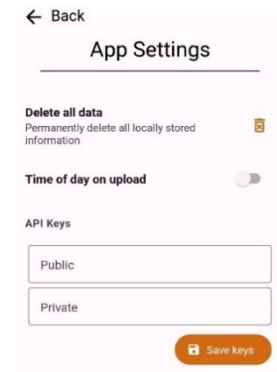
Figure 5: Removing 'time of day' timestamp

3. USING THE HM220i SYNC APP

The Hitman Sync App has been developed to enable Log Files to sync securely with your connected forest management platform or to be able to email these to a chosen recipient. The Hitman Sync App also allows easy user management of HM220i tool settings and configurations.

The Hitman Sync App enables you to:

- **CONNECT THE HM220i TOOL TO YOUR DEVICE OVER BLUETOOTH**
- **UPLOAD AND SYNC LOG FILES FROM THE HM220i TOOL WITH THE SYNC APP**
- **SYNC LOG FILES SECURELY FROM THE SYNC APP TO THE FIBRE-GEN CLOUD**
- **EMAIL LOG FILES FROM THE SYNC APP**
- **VIEW AND UPDATE HM220i TOOL SETTINGS**

3.1.   ENABLE BLUETOOTH ON THE HM220i TOOL

Bluetooth needs to be turned ON in the HM220i tool menu before connecting to the Sync App on your device

Follows these steps to connect:

- **TURN ON YOUR HM220i TOOL USING THE POWER BUTTON**
- **PRESS 6 ON THE KEYPAD TO BRING UP THE BLUETOOTH SETTINGS**
- **PRESS ENTER ON THE KEYPAD TO TURN BLUETOOTH ON**
- **ENSURE THAT THE TOP LINE NOW READS "Bluetooth=ON"**
- **PRESS F1 TO EXIT THE BLUETOOTH MENU**

Once in the HM220i Tool Settings screen the following functions are accessible:

- **ENTER KEY TOGGLES THE BLUETOOTH ON AND OFF**
- **F2 KEY ACTIVATES BLUETOOTH DISCOVERY MODE**
- **F1 KEY LEAVES THE BLUETOOTH MENU**
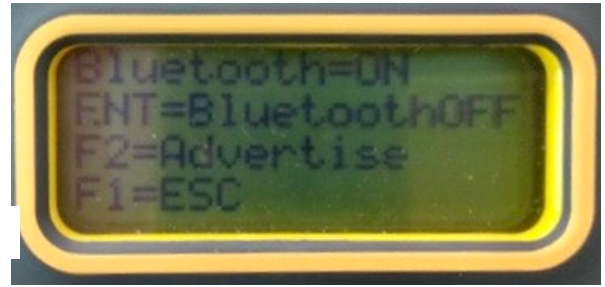
Figure 6: HM220i Bluetooth Modes

Note:
- Bluetooth will enter sleep mode when HM220i tool enters sleep to conserve power
- HM220i sleep mode default timer is extended to prevent interruptions when managing the tool
- Use F2 to reactivate Bluetooth Discovery mode if no connection is established after 20 seconds
- With Bluetooth=ON your device will automatically connect with the HM220i tool whenever you use it

3.2.   CONNECT HM220i WITH YOUR DEVICE

Open the Hitman Sync App on your device. Ensure your device Bluetooth is on. The Sync App will detect any HM220i tools in range with Bluetooth switched on. These will automatically appear in the list on the "Hitman Tools" page.

- Identify the desired tool from the list and tap the button to activate the pairing process
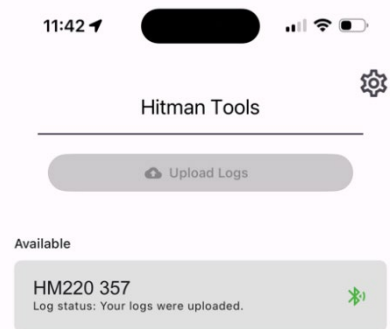
Figure 7: Hitman Sync App Home

3.3.   UPLOAD LOG FILES TO THE HITMAN SYNC APP

Your Log Files are stored within the HM220i tool internal memory. Once your device is paired with the HM220i you can upload the stored Log Files from the HM220i memory to the Sync App (see Figure 8).

To upload Log files from a specific HM220i tool:

- Access the "Tool Management" page and use the "Sync logs to App" button
- Once the Log files are synced you can upload to the cloud or email them

Note: Log Files remain in the HM220i memory after a copy is synced
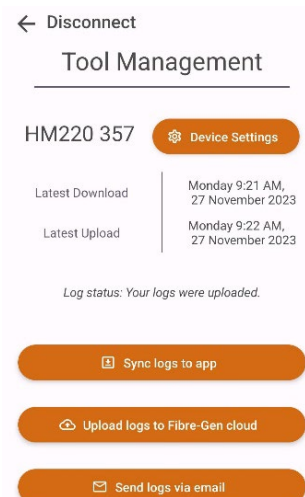
Figure 8: Tool Management Page

4. UPLOADING TO THE HITMAN CLOUD

Log Files can be uploaded to the Hitman Cloud from the Sync App. You can upload either device specific Log files or Log files from all devices at once where you may be managing multiple HM220i tools on site. This is useful when you have no cell coverage on site.

To upload Log from a specific HM220i tool:

- Select the HM220i tool from the "Hitman Tools" page (see Figure 7) and navigate to the "Tool Management page" (see Figure 8)
- Tap the "Upload logs to Cloud" button
- A pop-up notification reading "logs uploaded successfully" will indicate whether this was successful and going back to the "Hitman Tools" page will display the upload status (Figure 9).

To upload Log files from all HM220i tools listed on the Sync App:

- Ensure the Log files from all your tools are synced with your device
- Press the "Upload logs" button on the Sync App "Hitman Tools" page
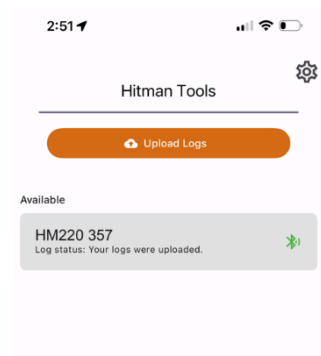
Figure 9: Upload all Log files

4.1. EMAIL LOG FILES FROM THE SYNC APP

The Sync App has the capability to send logs to external users via the Hitman Cloud (see Figure 10).

To activate this feature:

- Tap the "Send Logs via Email" button on the "Tool Management" page.
- Enter a start and end date to filter the Logs files to be sent from the Sync App
- Input the email address (last entered recipient will be saved)
- Select the "Log Format" to choose the Log file format (.CSV or JSON) to be emailed to the recipient
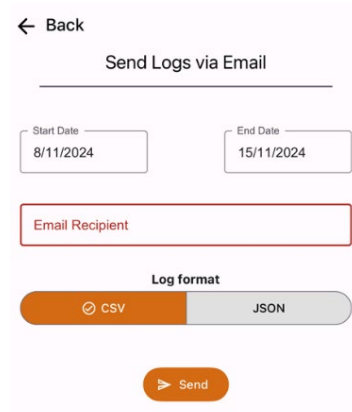
**Figure 10: Emailing Uploaded Logs (.CSV selected)**

Note: A .CSV provides an easy view of data via Microsoft's Excel spreadsheets and JSON is useful for technical use

5. MANAGE HM220i SETTINGS USING HITMAN SYNC APP

HM220i tool settings can be changed using the Sync App (see Figure 11.)

These settings include:

- Predefined Lengths: Set up or change the 'Predefined Lengths' to meet your default log length requirements.

- Speed Grades: Set up or change speed grades to align with the velocity range of your operations. The app simplifies the process, allowing you to optimise the tool's performance according to your workflow.

- Compartment & Stand: Configure compartment and stand settings to adapt the HM220i tool to different environments. Streamline log collection organisation by efficiently managing these settings through the app.

- System Settings and Parameters: Take command of system settings and parameters to tailor them to your tasks. From calibration preferences to log storage options, the app provides a centralised platform for managing these crucial aspects.
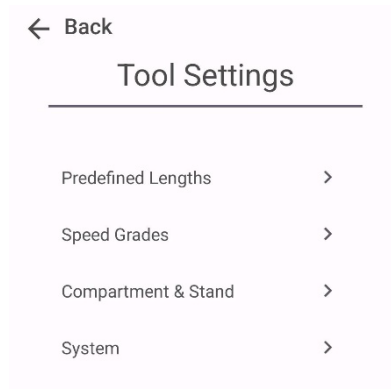
Figure 11: Tool Settings Page

5.1.   SETTING PREDEFINED LOG LENGTHS

Setting the predefined log lengths from the "Tool Management" page:

- **CLICK ON TOOL SETTINGS PAGE**
- **CLICK ON "PREDEFINED LENGTHS"**
- **SELECT LENGTHS TO BE MODIFIED**
- **KEY IN NEW VALUES**
- **CLICK SAVE**

Clicking on "Predefined Lengths" allows the user to assign a length to one of the 0 to 6 predefined lengths. Input the desired length in meters or feet/inches using the numeric keys and decimal place. The specified length should fall within the range of 2 to 50 meters or 6 feet 6 inches to 164 feet.

Note: The value stored in the 0 predefined length box is that which will automatically appear on HM220i startup

HITMAN

## 5.2. SET DEFINED SPEED GRADES AND GRADE COLOURS

Set up speed grades and colours from the "Tool Management" page (see figure 12):

- **CLICK ON TOOL SETTINGS**
- **CLICK ON "SPEED GRADES"**
- **SELECT GRADES TO BE MODIFIED**
- **KEY IN NEW VALUES**
- **CLICK THE COLOURED CIRCLE TO CHOOSE NEW COLOURS**
- **CLICK THE SCREEN TO LOWER THE KEYPAD AND CLICK SAVE**

You can establish specific velocity thresholds for three log grades and assign distinct colours to each grade. When testing a log, different tones will signal its grade. For the velocity grades:

- Grade 1 spans from zero (ft/s or m/s) up to the high range velocity entered for grade 1
- Grade 2 spans the high range velocity for grade 1 to the high range velocity entered for grade 2
- Grade 3 extends from the high range velocity for grade 2 up to 10 km/s (32,927 ft/s)

The system guides the user to choose a colour for display as the grade colour. Users can select from a list of available colours that appear when you click on the colored circle. **Note:** If the high range velocity for grade 2 is 10 km/s or greater, grade 3 will not occur. Grades are treated sequentially from 1 to 3.
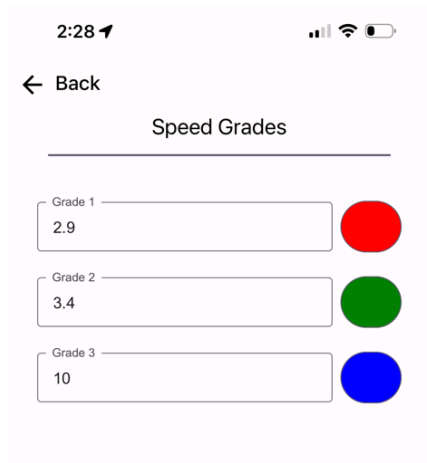
Figure 12: Setting Speed Grades

5.3. SETTING THE COMPARTMENT AND STAND NUMBERS

Setting the compartment and stand numbers from the Tool Management page:

- **CLICK ON TOOL SETTINGS**
- **CLICK ON "COMPARTMENT & STAND"**
- **SELECT COMPONENTS TO BE MODIFIED**
- **KEY IN NEW VALUES**
- **CLICK SAVE**

Note: A crew number may be entered in place of either the stand or compartment number

Manually enter the compartment and/or stand numbers, ensuring that the assigned values fall within the specified range of 1 to 9999. This process involves inputting the numerical identifiers associated with compartments and stands through manual log entry.

5.4.   MAX VELOCITY, CONFIDENCE AND AMV SETTINGS

Setting the system settings and parameters from the tool management page:

- **CLICK ON TOOL SETTINGS**
- **CLICK ON "SYSTEM"**
- **SELECT COMPONENTS TO BE MODIFIED**
- **KEY IN NEW VALUES**
- **CLICK SAVE**

The App allows you to modify three different settings and parameters as follows:

Maximum Velocity Setting:

- Typically set at 4.0 km/s (13171 ft/s) for Radiata pine or 5.4 km/s (17716 ft/s) for Douglas Fir.
- Alternative values may be used based on wood characteristics, e.g., dry wood may have a recommended maximum value of 5 to 5.5 km/s.

Confidence Threshold Value:

- Ranges from 0 to 99.
- Recommended setting is 20 for reliable measurements.
- After processing, the display shows 'GOOD' or 'REHIT' based on the confidence value.
- Less than 20 is considered a bad hit, 20 and above are acceptable, and 99 signifies perfect confidence.
- The value must be between 1 and 98.

Adaptive Maximum Velocity Threshold Value (AMV):

- HM220i calculates the appropriate max velocity based on acoustic signature if sufficient data is available.
- If not, the default value (applicable to maximum velocity) is used, enhancing measurement accuracy.
- Recommended AMV threshold value is 20.
- The value must be between 1 and 98.
- To disable "Adaptive Maximum Velocity," set the value at 1.