



MiniTracker 4 User's Manual

Congratulations on the purchase of your new AVID MiniTracker 4™ with Bluetooth® wireless technology. This reader is capable of reading AVID RFID microchips, as well as many other brands of RFID microchips using the FECAVA, Trovan, and ISO (FDX-B) protocols. It can also send microchip ID numbers to your tablet, smart phone or computer with Bluetooth® Low Energy support.

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AVID Identification Systems, Inc.
3185 Hamner Ave.
Norco, CA 92860
<http://www.avidid.com>

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1 Getting Started

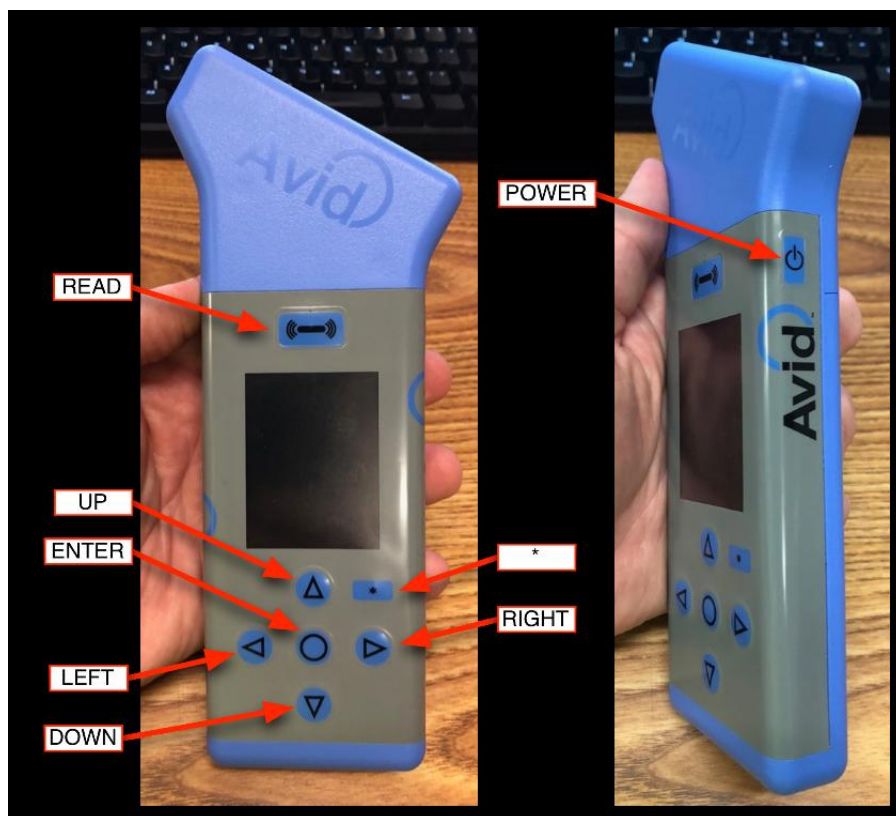


Figure 1: *MiniTracker 4™* Buttons

Power:

To turn on the device, press the blue button on the right side of the device above the Avid logo. The screen should turn on with a display of the Avid logo against a white background. To power off the device, press and hold the same button until the screen turns off.

Read:

Press the blue button above the display screen. Hold the button down and move the reader in a circular pattern while moving it toward the animal's head, starting from the middle of the animal's back.

When the microchip is found, the device will beep, and the screen will show the microchip number.

To stop reading, release the button. If you release the read button before the reader finds a microchip, then a "No ID found" message will be displayed in the status bar.

Enter:

If you press the enter button while the microchip number is displayed, it will provide information of the time when you scanned the microchip.

Arrows:

If you scanned multiple chips, you can use the directional arrow buttons to go to previously scanned microchip numbers to see the time and date of the scan.

Settings:

To access the settings menu, press the blue button with the asterisk. You should see a list of categories including Time, Date, Power, Auto-off, Bluetooth®, and USB. To exit the menu, press the same button again.

This button also functions as a back button.

1.1 Batteries and Mode Switch



Figure 2: *Changing Batteries*

The MiniTracker 4™ reader can be powered by either four internal AA alkaline cells, or by a USB power source (typically, a computer). The reader's USB connector is a reversible USB Type-C jack, which means that the Type-C plug may be inserted in either of the two orientations. The reader will be provided with a USB Type-C male to USB 2.0 Type-A male cable for connection to a computer during USB-powered tests.

Always keep the mode switch inside the battery compartment in the normal operation position.

To change the batteries, remove the two battery cover screws with a small Phillips screwdriver, install four fresh AA alkaline cells, and replace the cover and screws. The MiniTracker 4™ has reverse polarity protection, so accidentally installing the batteries incorrectly will not harm it.

1.2 USB-C Interface and microSD Card Slot



Figure 3: *USB Jack and microSD slot*

When the MiniTracker 4™ is connected to a computers USB port, it will present itself as a USB CDC ACM device (in other words, a virtual COM port). Current Windows, Linux, and macOS operation system releases come with the required devices pre-installed.

If a microSD card is inserted while using the FCC Test Mode, the MiniTracker 4™ will automatically perform accesses to the microSD card in order to generate the microSD bus activity.

2 Reading Microchips with Your MiniTracker 4™

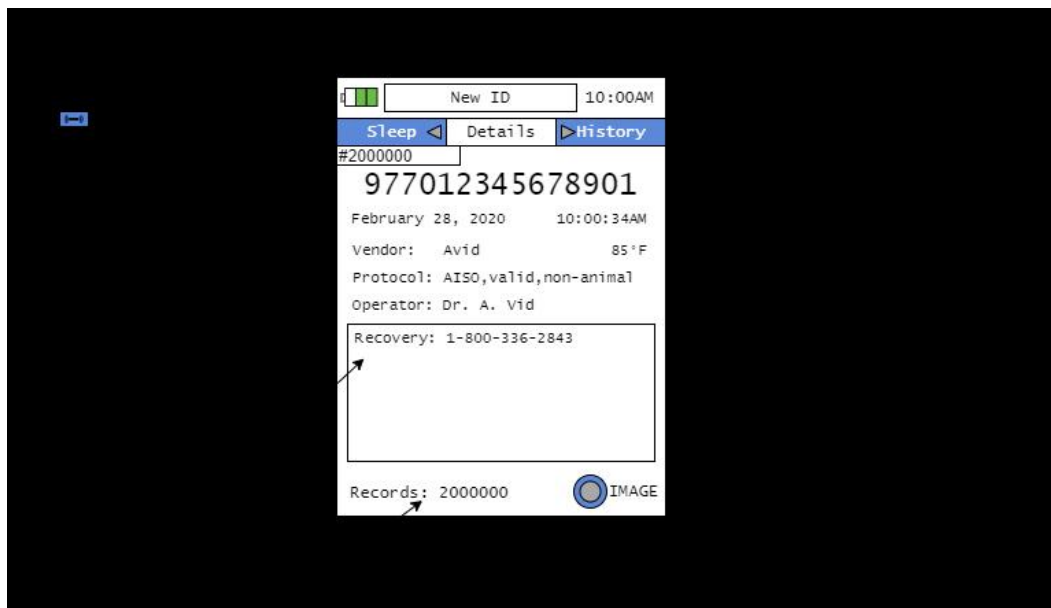


Figure 4: *Details Page*

The Details Page shown in Figure 4 is the main microchip scanning page. By default, it shows the detailed information on the most recently scanned pet ID in memory.

Feature	Description
Status Bar	Current status of the MiniTracker 4™. See Section 2.5 for details.
Sleep	Shuts off the display. Put the MiniTracker 4™ in standby mode. The MiniTracker 4™ is still fully functional and will start scanning with  .
History	Navigates to the scanning history page. See Section 2.1.
Record #	The sequential record number of the scanned pet ID.
Pet ID	The scanned pet ID.
Pet ID Record	Together with the pet ID, the timestamp, the vendor/country, the protocol, and the operator.
Notes	Customized notes for the customer and/or the pets. MiniTracker 4™ user may customize the notes through the data file on the micro SD card.
Image	Display the image associated with the pet.
Record Count	The total record count. In Figure 4, the Record Count is showing "2000000", which means that a total of 2,000,000 pet IDs have been scanned. You can use  and  to scroll through the scanned IDs.

Table 1: *Details Page Features*

The MiniTracker 4™ records the pet ID, the timestamp, the vendor/country, the microchip protocol, and the operator during scanning.

If you see a temperature below the time of the scanned microchip, then it means the chip that was scanned was temperature sensing. The temperature that you see is the temperature of the scanned microchip.

Label	Description
Timestamp:	Date and time when the pet ID was scanned. Accurate to the second.
Vendor/Country:	The microchip's vendor or country of origin. the scanned microchip.
Protocol:	The type of microchip. Typical options are AVID, ISO, FECAVA, and Trovan.
Operator:	The name of the person who scanned the pet ID.
Temperature:	[Optional] When the microchip provides temperature reading, the temperature will be displayed below the scanned time.

Table 2: *Pet ID Record*

2.1 History Page

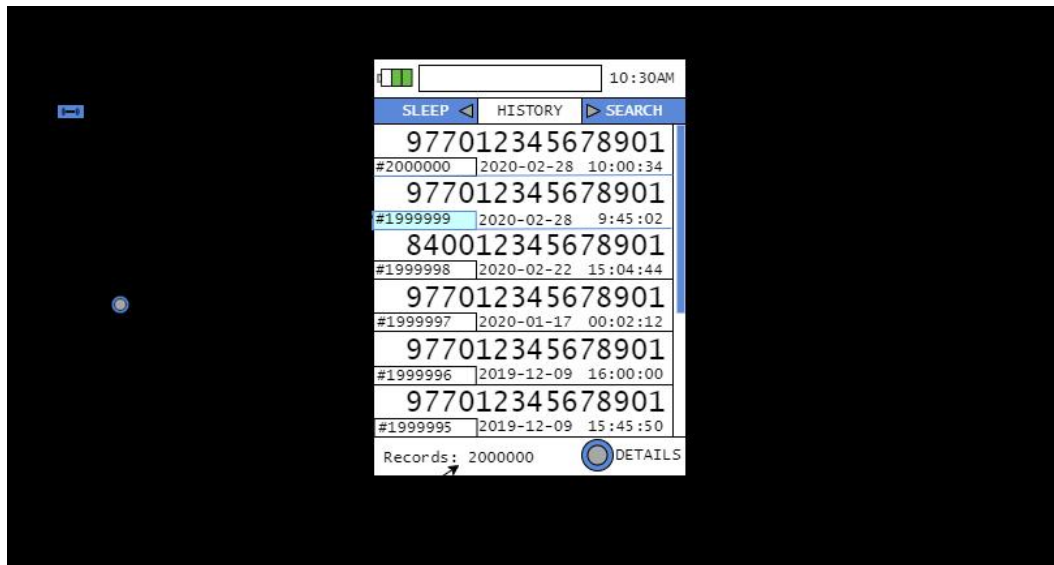


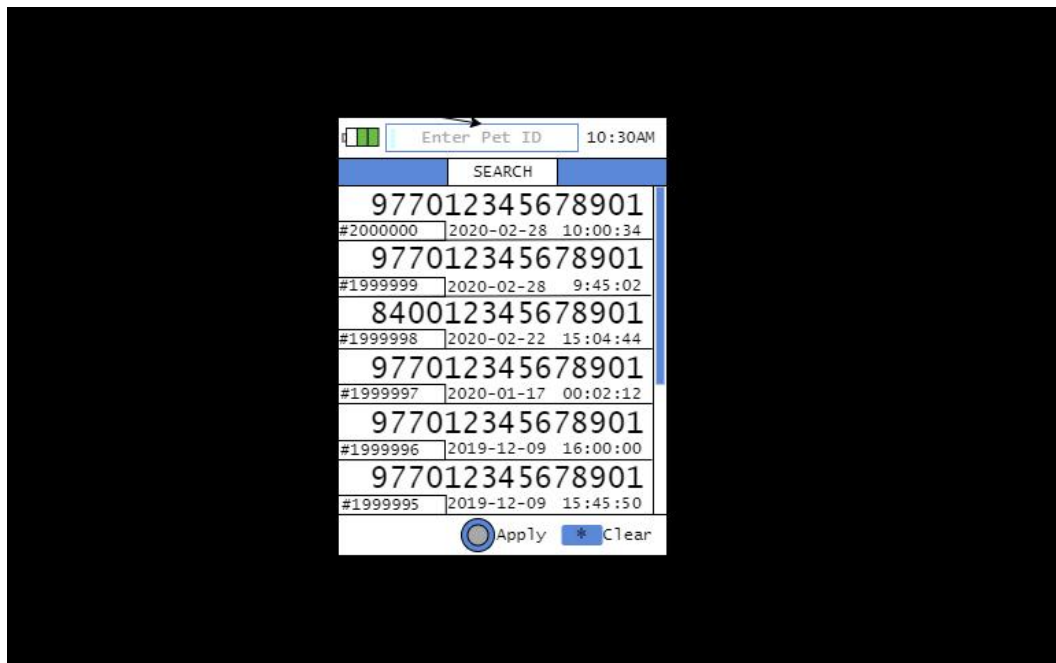
Figure 5: *History Page*

The MiniTracker 4™ keeps track of the scanning records in the micro SD card. Use  and  to navigate through the records. To quickly filter and navigate to your target records, use the Search page described in Section 2.2.

Feature	Description
Status Bar	Current status of the MiniTracker 4™. See Section 2.5 for details.
Sleep	Shuts off the display. Put the MiniTracker 4™ in standby mode. The MiniTracker 4™ is still fully functional and will start scanning with  .
Search	Search your target records. See Section 2.2.
Pet ID Selection	The selected pet record. Press  to see the details.
Scroll Indicator	The length of this vertical bar indicates the portion of the records being displayed relative to the total number of records.
Record Details	Press  to see the record details. See Figure 4.
Record Count	The total record count. A newer record has a larger number. In Figure 5, the Record Count is showing "2000000", which means that a total of 2,000,000 pet ID records have been scanned. You can use  and  to scroll through the scanned IDs.

Table 3: *Details Page Features*

2.2 Search Page

Figure 6: *Search Page*

The Search Page allows MiniTracker 4™ users to quickly lookup and navigate to the target records. You can search for all scanned pet IDs that contains the search pattern. To input the search pattern, use  and  to select the character at each position and use  and  to navigate to the target position. Once the search pattern is selected, press .

The search pattern will also apply to newly scanned pet IDs. To clear the search pattern, press  on the Search Page.

2.3 Microchip Protocol

Four common protocols are used in pet microchips: Avid, ISO, FECAVA, and Trovan. They're displayed on the MiniTracker 4™ in the format shown in Table 4.

Microchip Protocol	Display Example
Avid	AVID*123*456*789
ISO	977200000979956
FECAVA	22A2426F10
Trovan	00-0132-824F

Table 4: *Pet ID Display Formats*

2.4 Scanning Tips

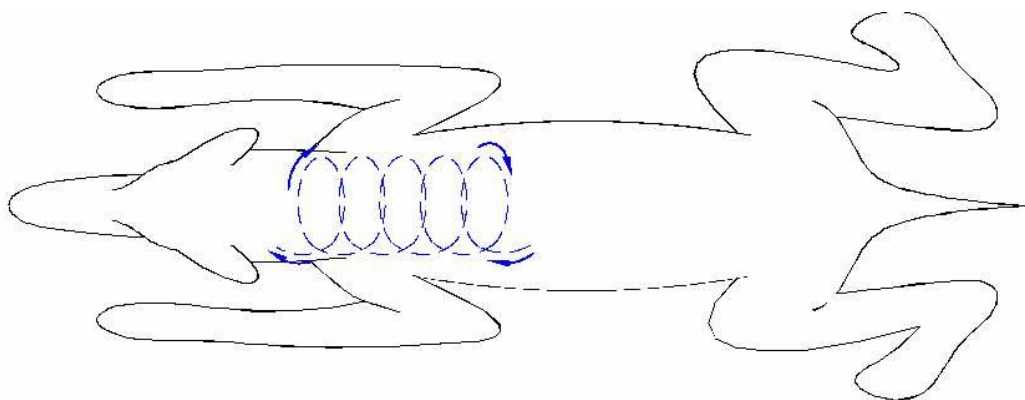


Figure 7: *Scanning Pattern*

Figure 7 illustrates the most effective motion to follow when scanning for the microchip on your pet.

Metal objects (especially ferrous metals) absorb electromagnetic fields. Operating the reader antenna or placing the microchip too close to metal objects can severely limit the reading range of the reader. If you are experiencing reduced operating range, check for metal tabletops, doors, cage walls, *etc.* in close proximity (a few inches) to any part of the microchip and/or reader. Also, make sure that you are using fresh batteries, because using a weak battery will reduce microchip read range.

2.5 Status Bar

The MiniTracker 4™ status bar shows the current scanning, battery, and data connection statuses of the scanner. It also displays the current time at the upper-right corner.

2.5.1 Status

The MiniTracker 4™ state is displayed in the middle of the status bar. The different options are described in Table 5.

Status	Description
New ID	A new pet ID was scanned.
No ID found	Scanning stopped but no pet ID was found.
Temperature	Temperature read from a temperature-sensing microchip, including Bio-Thermo™.
Validating	An ISO microchip with authentication information is found. Validation started.
Validated	The last scanned Authenticated ISO microchip is validated.
Invalid	The last scanned ISO microchip has invalid authentication information.

Table 5: *MiniTracker 4™ Statuses*

2.5.2 Battery and Connection

The icon in the top left corner indicates the level of the batteries in your device. There are four different levels of the battery, as described below:

Full Battery

This status indicates that the batteries are full.

Two-thirds Battery

This indicates that there is roughly two-thirds of the battery life left.

One-third Battery

This status indicates there is roughly one-third of the battery life left.

Empty Battery

This status indicates that the batteries in your device are very low and you need to replace the batteries or plug in the device to keep using the MiniTracker 4™.

Empty Battery with USB Connection

When the MiniTracker 4™ is connected to a USB host. The characters 'U', 'S', and 'B' will be shown on the battery symbol.

2.5.3 Time

The current time is displayed in the top right portion of the display screen. You can change the time by pressing  to access the Settings menu. See details in Section 3.

3 Settings

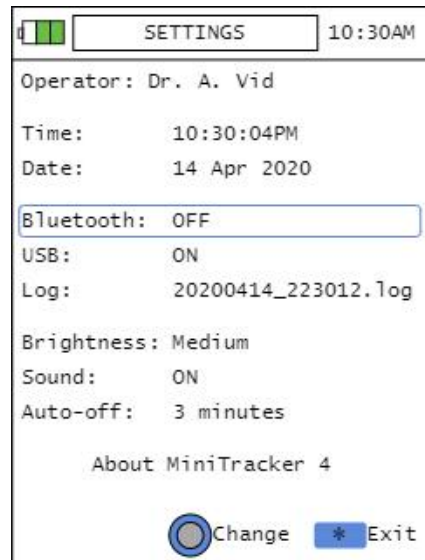


Figure 8: *Settings Page*

The Settings page allows the user to change the settings and operation modes of the MiniTracker 4™. The description for the settings fields are described in Table 6.

Field	Default	Description
Operator	MT4 User	The name of the operator. It is recorded in all scanning records.
Time	00:00:00 AM	Current time. Accurate to the second.
Date	10 May 2023	Today's date.
Bluetooth	Off	Change the state of the Bluetooth® interface. See Section 4. • Off - Power off the Bluetooth® interface. • Keyboard - Power on the Bluetooth® interface in HID keyboard mode. • Data - Power on the Bluetooth® interface in data mode. • Pair - Pair with a new device, e.g. phone and tablet. • Erase - Erase the current bondings.
USB	Off	Change the USB state. • Off - Power off the USB interface. • Terminal - Enable USB terminal emulation.
Log	mt4.log	Log filename. Maximum 20 characters.
Brightness	Max	LCD brightness level. Keep the brightness low for maximum battery life. • Low - Lowest brightness level. • Medium - Medium brightness level. • High - High brightness level. • Max - Maximum brightness level.
Sound	On	Switch on or off the indicator sound. • Off - Disable sound. • On - Enable sound.
Auto-off	3:00	The number of idle minutes and seconds before the MiniTracker 4™ powers off itself.
About MiniTracker 4™		Information on the MiniTracker 4™.

Table 6: *MiniTracker 4™ Settings*

4 Bluetooth® Interface

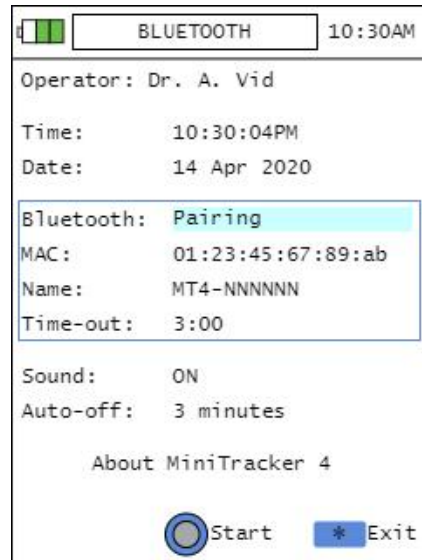


Figure 9: *Bluetooth Page*

The MiniTracker 4™ can send each pet ID that it scans to a Bluetooth® enabled device, e.g. a tablet, smart phone, or computer. The scanner can either appear as a wireless keyboard or a data source to the connected device. No special software or driver is required on the connected device as long as it has hardware and operating system support for Bluetooth®. The MiniTracker 4™ can be used with any software that accepts keyboard input, e.g. spreadsheet, text editor, and web browser. Advanced user can use the Bluetooth® interface for automation.

Before the reader can talk to your device, you need to pair them using the Bluetooth menu shown in Figure 11. Table 7 provides brief description for each Bluetooth® feature.

Bluetooth® Power	Description
Off	Power off the Bluetooth® interface.
Keyboard	Power on the Bluetooth® interface in HID keyboard mode.
Data	Power on the Bluetooth® interface in data mode.
Pair	Pair with a new device, e.g. phone and tablet.
Erase	Erase the current pairing.

Table 7: *Bluetooth® Control*

4.1 Using the Bluetooth® Interface

Once the reader is paired with your device and connected to it, put the device's cursor on its device screen where you want a microchip number typed in. Read a microchip with your reader and then the microchip number will appear on the paired device as though the number had been typed in from an HID keyboard.

Many devices will hide their on-screen keyboard when any wireless keyboard is connected. Just turn off your reader when you need to access the on-screen keyboard on one of these devices.



Figure 10: App

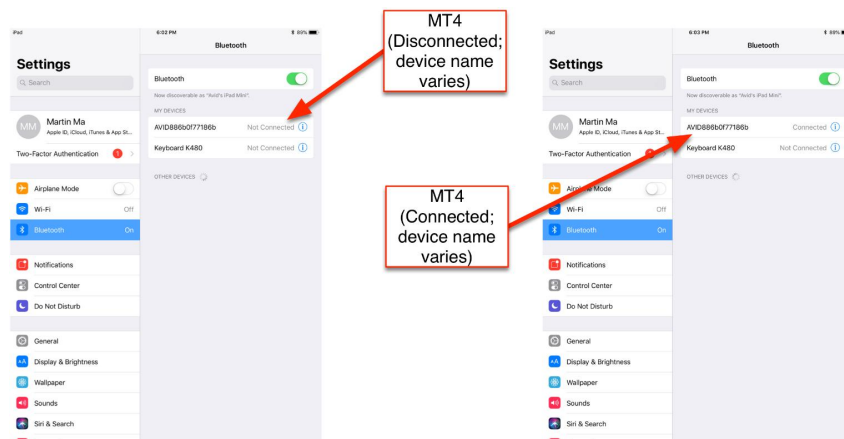


Figure 11: iPad Bluetooth® Settings

4.2 The MiniTracker 4 App

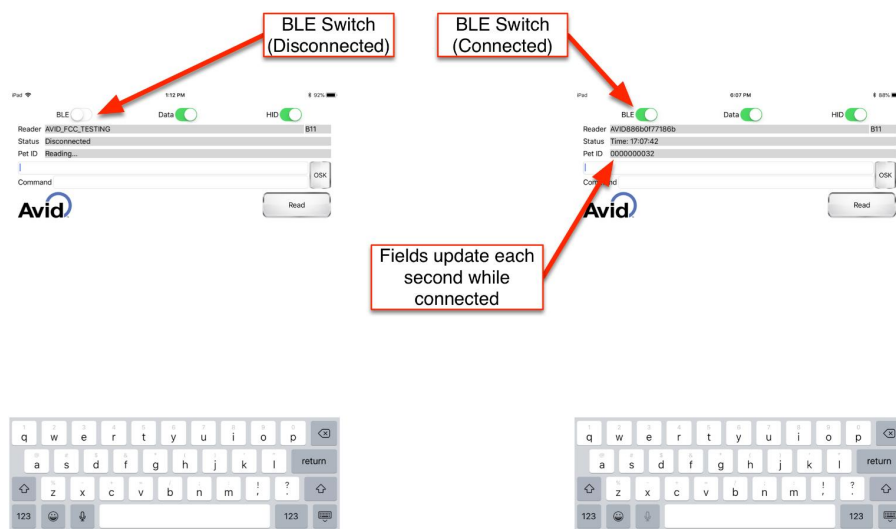


Figure 12: Avid App

5 MiniTracker 4 Updates

The MiniTracker 4™ can be updated with the Avid® Reader Tools. Users can download the latest MiniTracker 4™ software and the Reader Tools from <https://avidid.com>. This section describes the installation and usage of the Avid® Reader Tools.

5.1 Installing the Avid Reader Tools

1. Go to <https://avidid.com> to download the latest version of the Avid® Reader Tools.
2. Run Setup.msi and following the instructions.
3. The default installation path is "C:\Avid Identification Systems, Inc\Avid Reader Tools\". To change the installation path, select "Change" to open up the folder selection dialog shown in Figure 13; otherwise, select "Next" to continue the installation process.

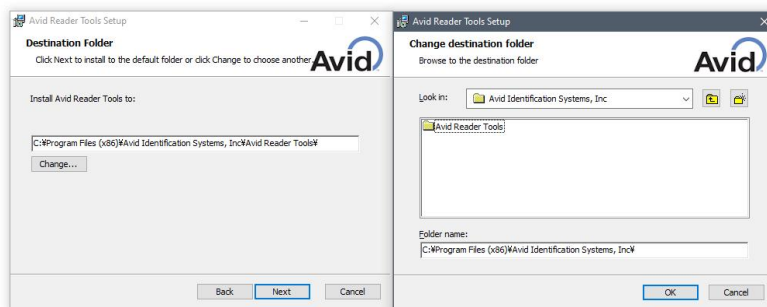


Figure 13: Choosing the software installation location

4. A User Access Control dialog similar to the one shown in Figure 14 may appear to warn about the installation process. Select "Yes" to continue.

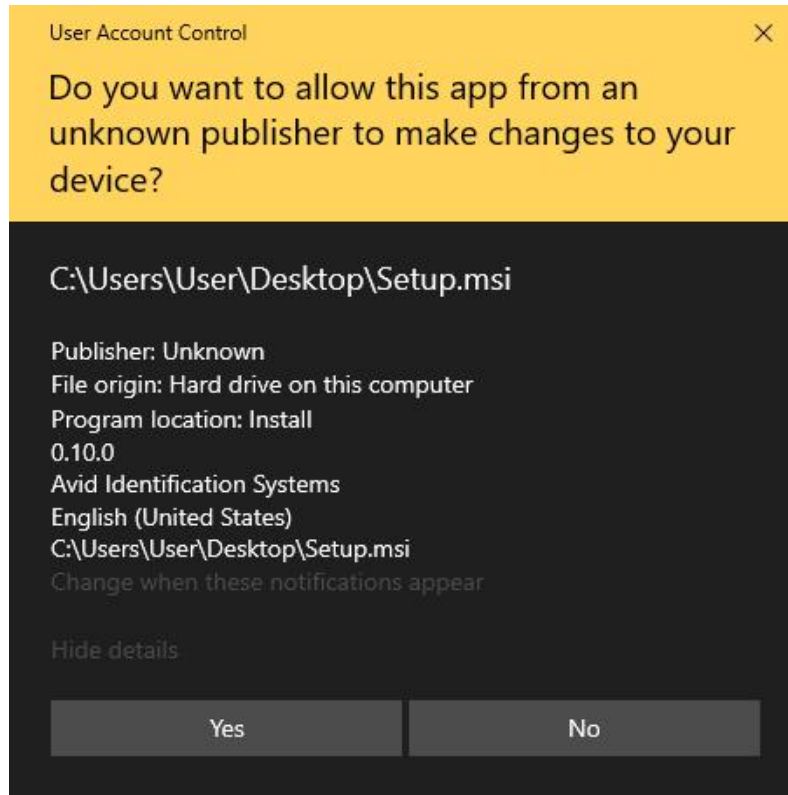


Figure 14: *User access control window.*

5. After the application is installed, the installer will give you the option to install the drivers for connecting with the MiniTracker 4™. If this is the first time the Avid® Reader Tools, keep this option checked as shown in Figure 15 and select "Finish" to complete the installation.

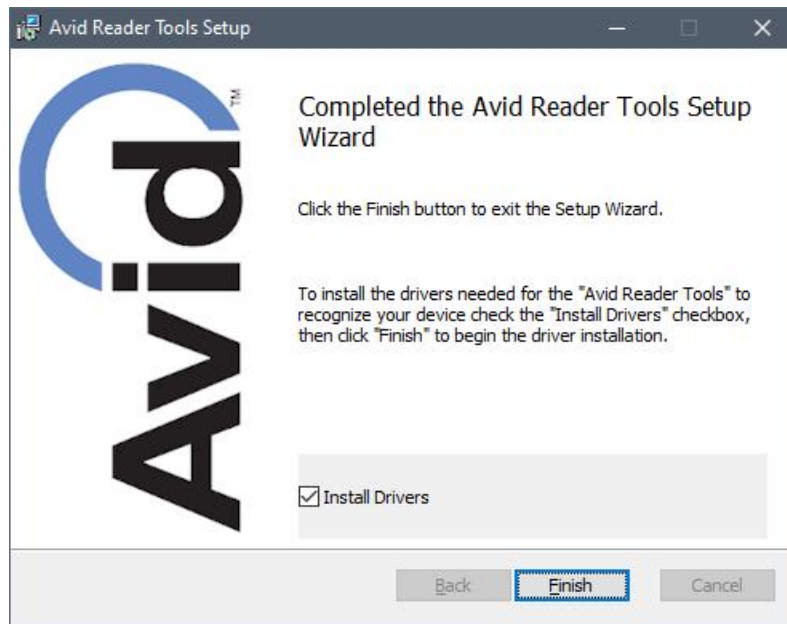


Figure 15: *Installing drivers after software installation.*

6. With the "Install Drivers" option selected, the installer will proceed to install the MiniTracker 4™ drivers and bring up the driver installation dialog shown in Figure 16. When the window appears click "Next".

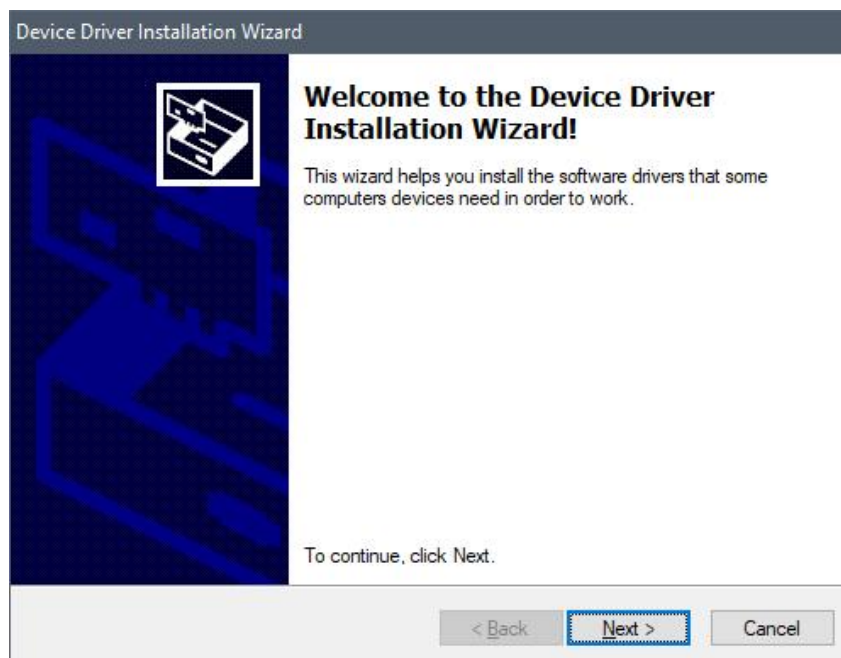


Figure 16: *Driver Installation*

7. When the driver installation is completed, click 'Finish'. The Avid® Reader Tools is now ready to connect with your MiniTracker 4™.

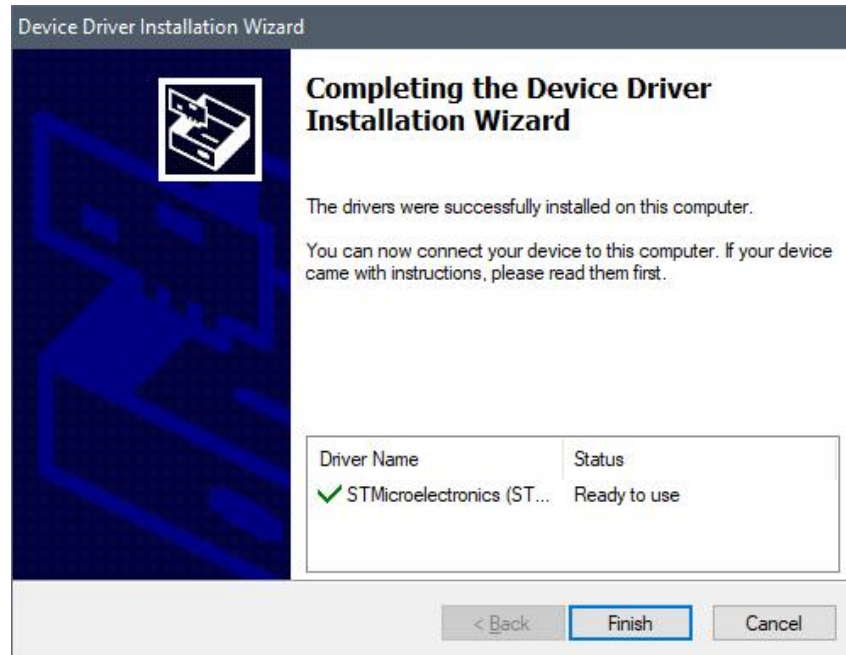


Figure 17: *Driver Installation Completed*

5.2 Uninstalling the Avid® Reader Tools

1. To remove the Avid® Reader Tools, go into the Windows Settings menu by selecting the gear icon in the Windows® menu shown in Figure 18.

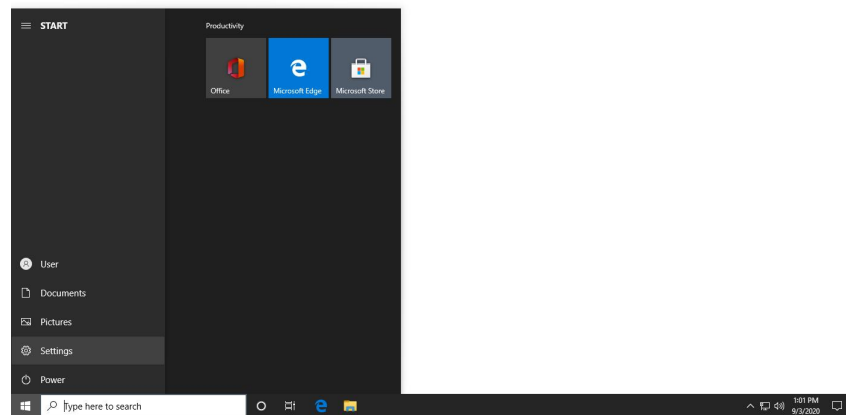


Figure 18: *Opening windows settings*

2. Click on the Apps icon shown in Figure 19 to enter the Apps Settings. Find Avid® Reader Tools in the list on the right.

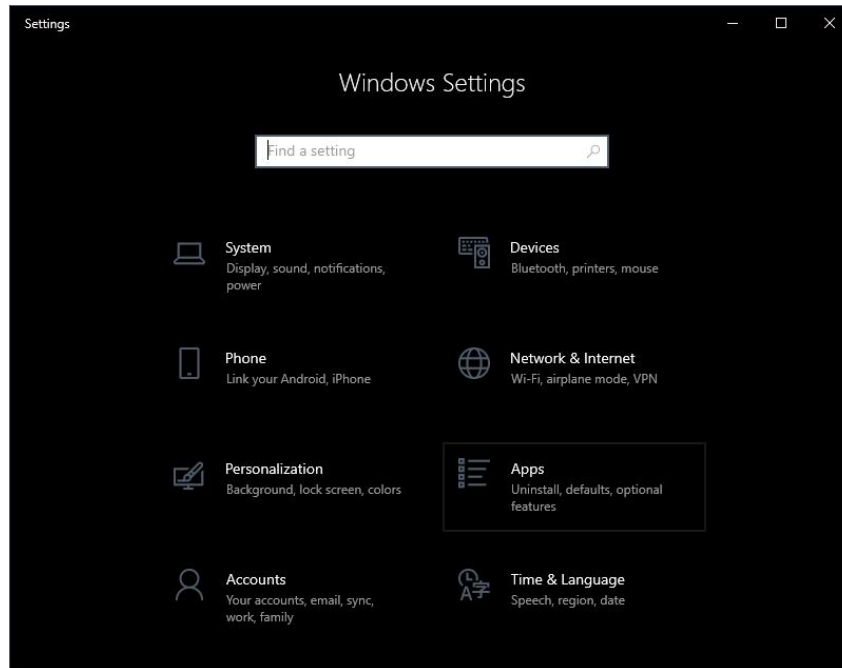


Figure 19: *Opening windows Apps settings*

3. Select the Avid® Reader Tools item and press 'Uninstall'. Press 'Uninstall' again when the message in Figure 20 appears.

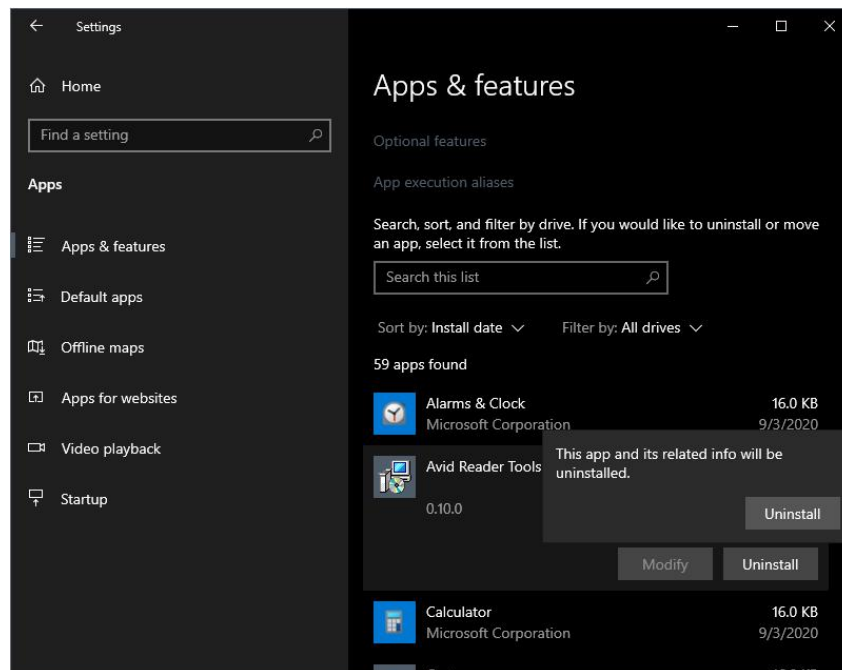


Figure 20: *Opening windows settings*

5.3 Updating the MiniTracker 4™

Once you have downloaded and installed the Avid® Reader Tools, follow the instructions below to update the software on your MiniTracker 4™.

5.3.1 Preparing the MiniTracker 4™

1. Download the latest MiniTracker 4™ update file from <https://avidid.com>.
2. Switch off the MiniTracker 4™ and remove the USB cable if it is connected.
3. On the back of the MiniTracker 4™, remove the two screws holding the battery cover plate in place. Keep the cover and screws in a safe location.
4. Remove the batteries.
5. Move the micro-switch to the "UPDATE SOFTWARE" position as shown in Figure 21.



Figure 21: *MiniTracker 4™ in "Software Update" mode*

6. Connect the MT4 and your computer with the supplied USB cable.

5.3.2 Running the Reader Tools



1. Run  to bring up the Avid® Reader Tools application shown in Figure 22.

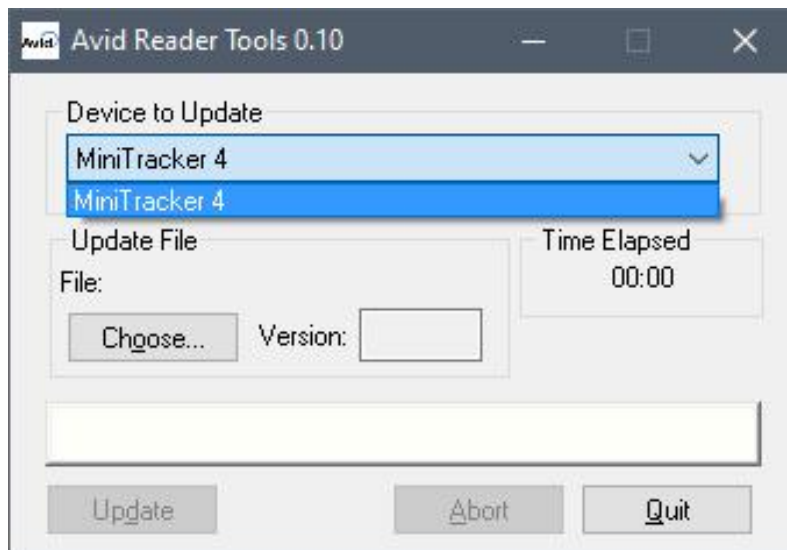


Figure 22: *Selecting device to upgrade.*

2. Select "MiniTracker 4" in "Device to Update" as shown in Figure 22.
3. Use the "Choose..." button to locate the update file with the explore window shown in Figure 23. The MiniTracker 4™ update file has extension ".dfu". With the update file selected, use the "Open" button to load the update file.

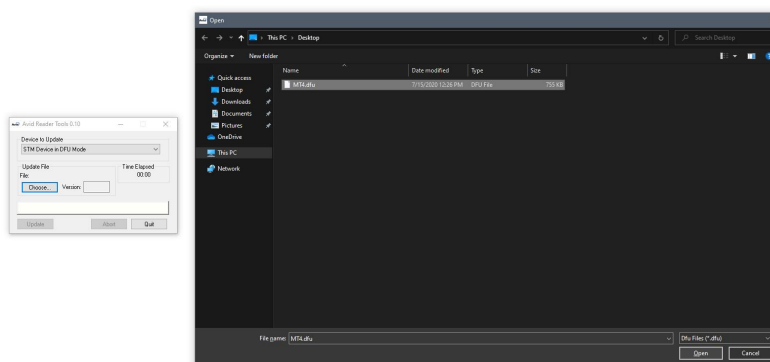


Figure 23: *Selecting firmware upgrade DFU file.*

4. The Reader Tools will display the "File correctly loaded." message shown in Figure 24 when a valid update file is selected.

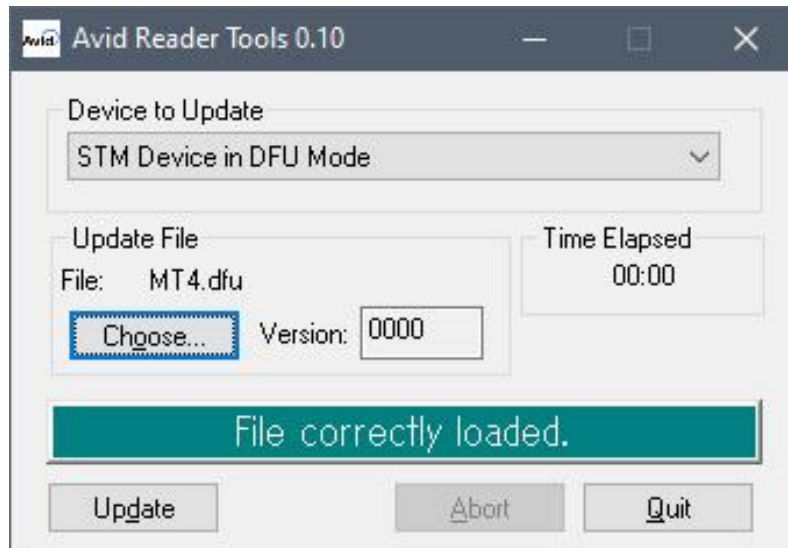


Figure 24: *DFU file selected loaded successfully.*

5. Select the "Update" button to start. When the update is completed, the Reader Tools will display "Update Successful".

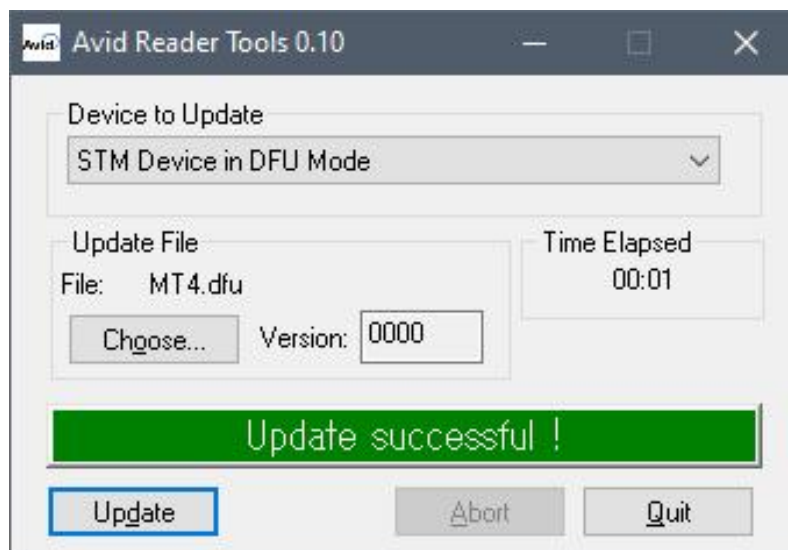


Figure 25: *Successfully upgraded the selected MiniTracker 4™.*

6. Disconnect the USB cable from the MiniTracker 4™.
7. Move the micro-switch back to the "SCAN MICROCHIPS" position shown in Figure 26.



Figure 26: *MiniTracker 4™* in "Scan" mode

8. Install the batteries and secure the battery cover with the two screws as shown in Figure 2.
9. When you switch on your MiniTracker 4™, it will be running the updated software.

5.3.3 Troubleshooting

If your MiniTracker 4™ does not show up in 'Device to Update', go through the following steps:

1. Set the micro-switch in the battery compartment to "UPDATE SOFTWARE". If your device was already switched to "UPDATE SOFTWARE", set the switch to "SCAN MICROCHIPS" and then back to "UPDATE SOFTWARE". Proceed from Step 2 in Section 5.3.
2. Inspect the USB cable for damages. If the cable is not damaged, disconnect the cable from the MiniTracker 4™ and the computer, then reconnect the cable back. Then proceed from Step 2 in Section 5.3.
3. Quit Avid® Reader Tools and run it again from 1 in Section 5.3.
4. Restart your computer, then run the Avid® Reader Tools from Step 1 in Section 5.3.

If your MiniTracker 4™ does not show up after going through the above steps, use the manual driver select procedure described in Section 5.3.4 to select the MiniTracker 4™ driver.

5.3.4 Selecting the Driver

1. Connect your MiniTracker 4™ in "UPDATE SOFTWARE" mode as described in Section 5.3.1.
2. Bring up the Microsoft Windows® Device Management Control. This can be achieved by either navigating through the graphical interface or by directly running the "devmgmt.msc" control file using the "Run" dialog shown in Figure 27. The "Run" dialog can be brought up by the key combination **Win** + "r".
3. Type "devmgmt.msc" in the "Run" dialog window and click "OK".

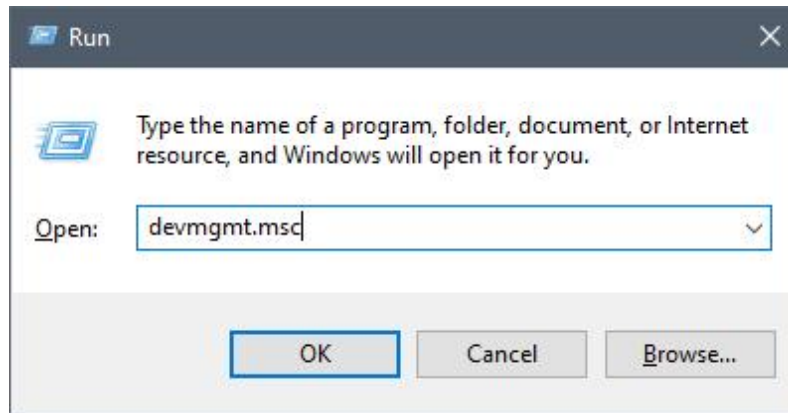


Figure 27: *Command and method to open Device Manager.*

4. In the Device Manager Console, expand the "Universal Serial Bus devices" and right-click on "STM32 BOOTLOADER" as shown if Figure 28. If "STM32 BOOTLOADER" cannot be found call Avid for technical support.

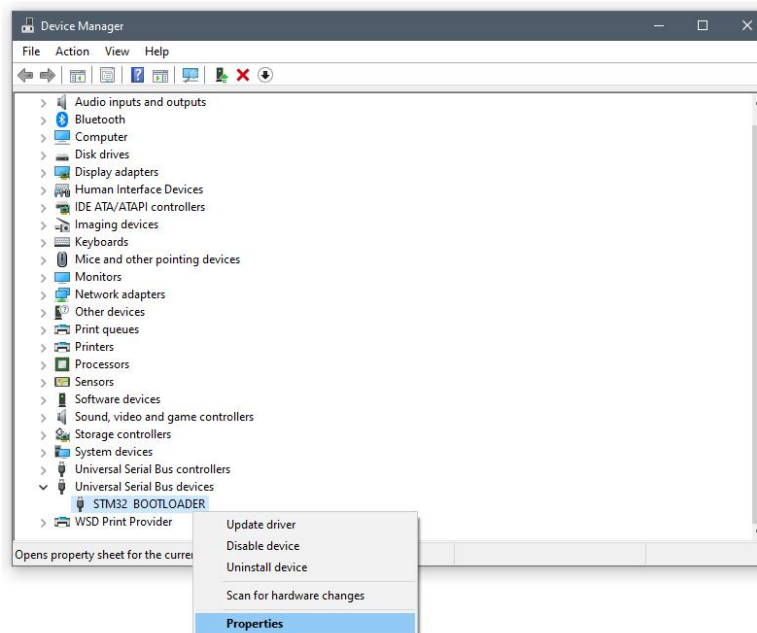


Figure 28: *Finding the device using the wrong driver.*

5. Select "Properties" to open the properties dialog and navigate to the "Driver" tab shown in Figure 29.

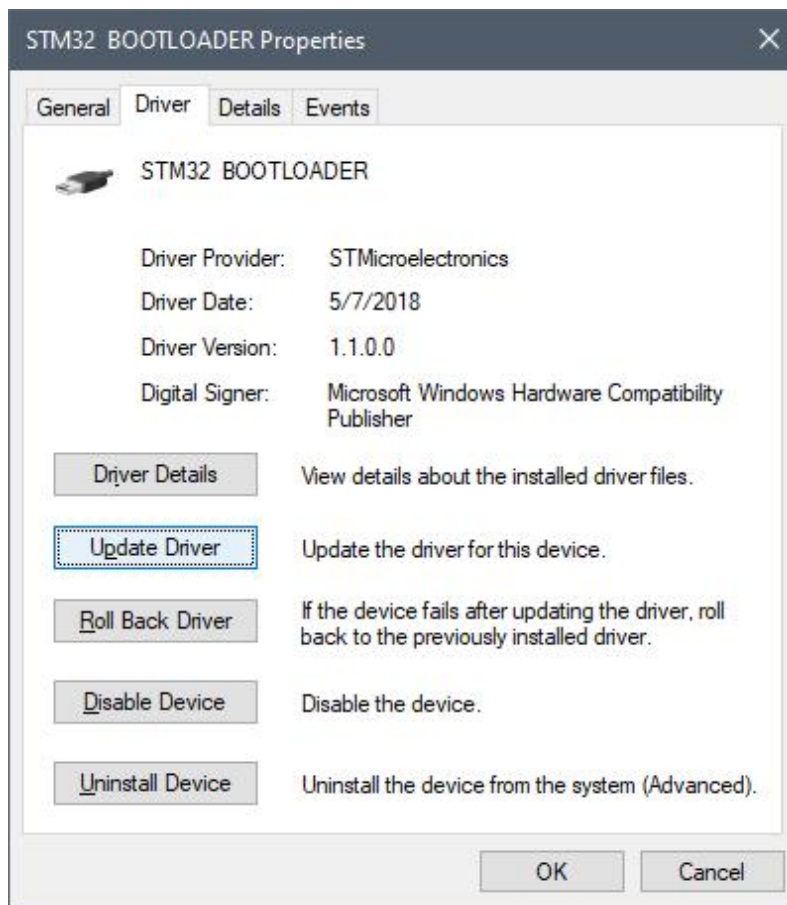


Figure 29: *Driver options tab.*

6. Select "Update Driver" to open the Update Driver dialog.
7. Select "Browse my computer for drivers" followed by "Let me pick from a list of available...".

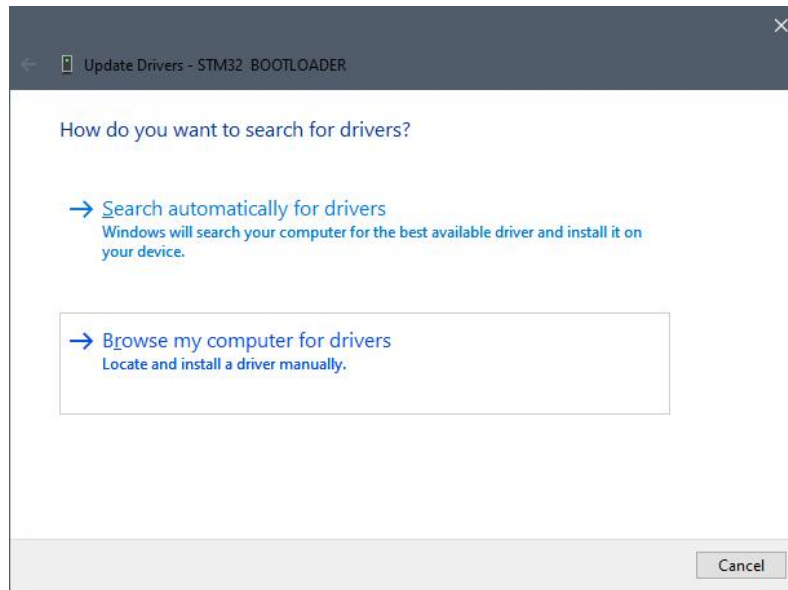


Figure 30: *Manually look for the needed driver.*

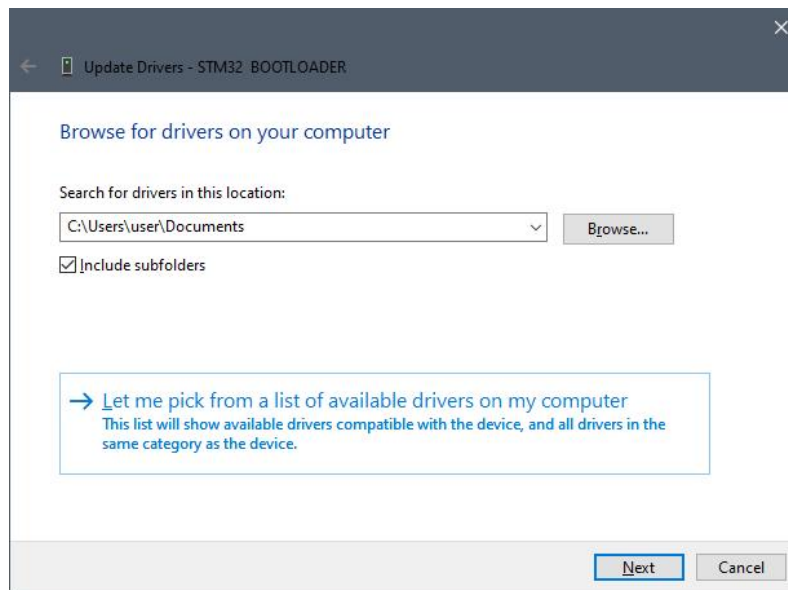


Figure 31: *Choose the driver from a list.*

8. A list of compatible hardware will be displayed in the next dialog as shown in Figure 32. Select "STM Device in DFU Mode", then click "Next".

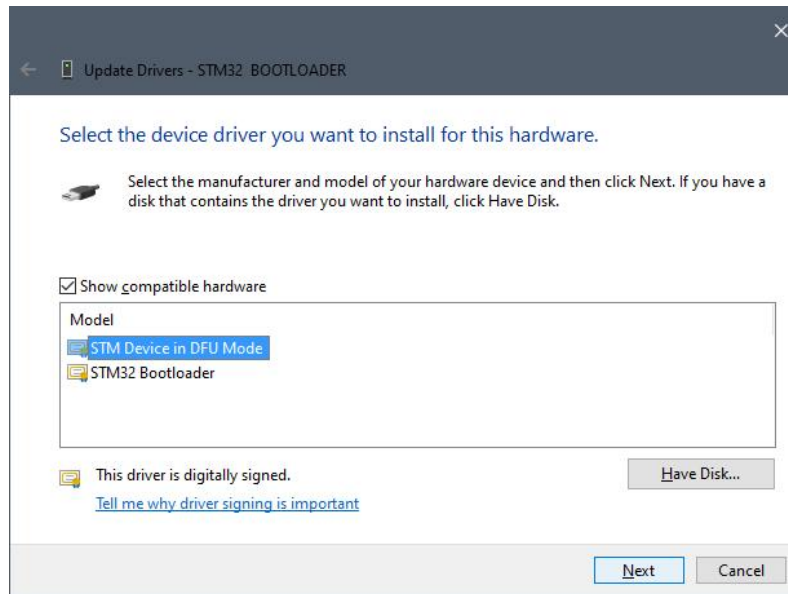


Figure 32: *Selecting the correct driver for the MiniTracker 4™.*

9. Windows® will now use the DFU driver for the MiniTracker 4™. The Reader Tools can now connect with the MiniTracker 4™.

6 Specifications

MiniTracker 4™ Specifications	
Operating Frequency:	134.2kHz
Storage:	microSD
8GB (standard)	20 million time-stamped pet ID records
128GB (maximum)	320 million time-stamped pet ID records
Data Connections:	Bluetooth® 5.3 and USB
Display:	240x320 color liquid crystal display (LCD)
Sound:	Audible beeps
Microchip Reading Ranges:	
Avid (125kHz)	6" (15cm) typical†
FECAVA (125kHz)	6" (15cm) typical†
ISO FDX-B (134.2kHz)	8" (20cm) typical†
Trovan (128kHz)	2.5" (6cm) typical†
Power:	Four AA alkaline batteries or USB
Operating Temperature Range:	-4° to 129°F (-20° to 54°C)
Storage Temperature Range:	
with batteries	-4° to 129°F (-20° to 54°C)
without batteries	-4° to 158°F (-20° to 70°C)
Dimensions:	3.25" W x 8.25" L x 0.88" H (8.26cm W x 20.96cm L x 2.24cm H)
Weight:	
with batteries	13 oz. (370g)
without batteries	9.8 oz. (277g)

Table 8: *MiniTracker 4™ Specifications*

†Reading ranges were measured using 12mm, 12-gauge implantable microchip transponders. Reading distances will vary depending on the orientation and the size of the microchip transponder.

7 Regulatory Information

FCC ID:	IOL-134-AV1050
Contains FCC ID:	IOL-BT840F

This equipment has been tested and found to comply with the limits for a class B digital device pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the users authority to operate the equipment.

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8 Warranty and Customer Service

The MiniTracker 4™ is warranted to be free of manufacturing defects for a period of one year from the date of purchase. Defective readers will be repaired or replaced at the discretion of Avid Identification Systems, Inc.

Please contact an Avid representative for a Return Merchandise Authorization (RMA) number, or if you have any questions about using your MiniTracker 4™.

Customer Service:

Within USA:	1-800-336-2843
Outside USA:	+1-951-371-7505
Fax:	+1-951-737-8967
Email:	support@avidid.com
Web Site:	https://www.avidid.com

Mailing Address:

Avid Identification Systems, Inc.
3185 Hamner Avenue
Norco, CA 92860
USA