

Application Note

Connecting the TrackKing-1 using Bluetooth

This Application note describes how to establish a Bluetooth connection between the TrackKing-1 and various devices. It also explains the various ways to communicate over Bluetooth to these devices.

Setting up a Bluetooth connection on the TrackKing-1

The Datamars TrackKing-1 reader (Bluetooth version) can communicate with phones, PCs and other Bluetooth-enabled devices wirelessly.

This enables RFID tags to be read and seamlessly transmitted to programs running on these devices with a single press of a button and without having to connect cables.

There are two different ways for this Bluetooth communication to take place. These are called “profiles”:

1. “Keyboard wedge” profile is where the TrackKing-1 reader acts like a keyboard for input to third-party applications. If an RFID tag is read by the TrackKing-1, the tag data is streamed via Bluetooth to the receiving application as if it were being input via a keyboard. For example, if the cursor in an Excel application is placed in the formula entry bar, then the tag data will appear in the currently selected cell. No additional software is needed.
2. “COM port” profile is used when the receiving application is expecting input via a serial interface device. In this case, if an RFID tag is read by the TrackKing-1 reader, the tag data is streamed via Bluetooth to the receiving application as if it were being input via the serial port used by the application.

The user first has to select which of these profiles is to be used. This is done via the “Settings” menu.

Profile Selection

On power on, the TrackKing-1 home screen is shown (Figure 1).



Figure 1

To display the “Settings” menu, press the “Settings” button 

Note: In this guide, the buttons to the upper right and upper left of the “ON” button will take on different meanings depending on what is shown on the screen directly above them.

When the settings menu is shown (Figure 2) use the left arrow key  to navigate to the Bluetooth option  (third symbol from the left on the top row) and press “ON”. The Bluetooth settings menu will then open.



Figure 2

On opening, the Bluetooth on/off option is active. If it is off, press the “ON” button to switch Bluetooth on. When Bluetooth is switched on, the message “Discoverable” appears on the screen (Figure 3).

The reader can now be found by other Bluetooth devices such as computers, phones, etc.



Figure 3

Press the right arrow button  to move to the second menu option (Figure 4), “Profiles”. Press the “ON” button repeatedly and the display will cycle through the keyboard wedge  and COM serial interface  profiles. Select the desired one.



Figure 4

It is explained below how to transmit data in each of these two profiles. First, however, the Bluetooth connection to the receiving device must be established.

Establishing the Bluetooth connection

To connect the Tracking-1 to another Bluetooth device, such as a computer or phone, the devices must first “discover” each other. This can be done from other device, or from the Tracking-1.

Connection from other devices

To connect from the other device, open the device’s Bluetooth menu and search for the Tracking-1. This procedure will depend on the operating system used (e.g., in Windows it is “add a device”). When the Tracking-1 appears in the device list select it and it will connect. Upon successful connection, the message on the Tracking-1 display in the Bluetooth menu will change from “Discoverable” to “Connected” (Figure 5) and the Bluetooth symbol at the top of the screen will change from white to green. The currently selected profile will appear below the “Connected” message.



Figure 5

Connection from TrackKing-1

To connect from the TrackKing-1, use the right arrow button  to move to the third menu option

in the Bluetooth menu  and select it using the "ON" key. Available Bluetooth devices will then be displayed (Figure 6)

Use the down arrow button  to highlight the desired device and press "ON" to select it.



Figure 6

The other Bluetooth device may then ask for permission to "pair" with the TrackKing-1 and this permission should be given. A security PIN code may be entered in the Bluetooth device to establish the connection. For this purpose, 3 possible PIN codes can be chosen:

- 0000 
- 1234 
- 9999 

Selecting the option  no PIN will be required

Select the AUTO icon  to pair the TrackKing-1 with the last bluetooth device connected.

Upon successful connection, the message on the TrackKing-1 display will change from "Discoverable" to "Connected" (Figure 7) and the Bluetooth symbol at the top of the screen will change from white to green. The currently selected profile will appear below the "Connected" message.

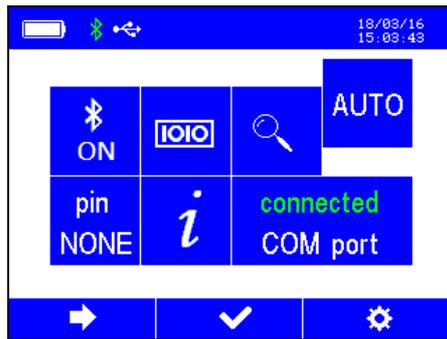


Figure 7

NOTE: When the profile (keyboard wedge/COM) is changed, the TracKing-1 will automatically disconnect the Bluetooth link and will revert to “Discoverable”. It will then have to be reconnected.

Profile differences

Now that Bluetooth has been switched on, and the TracKing-1 and the user’s device have been connected together via Bluetooth, tag data can be read. It is read differently depending on the profile selected.

Keyboard Wedge

When the “keyboard wedge” profile has been selected and the Bluetooth connection established (Figure 8), as described above, it is possible to read tags into a PC, phone or other device as if they were being input via a keyboard.



Figure 8

On the other device (PC, phone or other), start the required application (e.g. Excel sheet or database on a PC, or notepad on a smartphone) and place the cursor where the animal code should appear. Reading a tag will now cause the animal code to appear in the application, where the cursor was placed. Reading tag data with this profile works with all Bluetooth enabled devices, and no special software is required.

COM

This profile is used when the receiving application is expecting input via a serial interface device. The most common usage is with equipment such as weigh scales. In this case, once the pairing is established and the tag is read, the data is streamed via Bluetooth from the TracKing-1 to the receiving application as if it was being input via the serial port.

It is also possible to remotely control the reader from a PC using the COM profile, via the S-ID application software supplied with the reader. To do this, open S-ID on your computer click to connect to the reader by choosing the “reader remote control” option, and follow the instructions.

Note that this functionality requires a full installation of S-ID (rather than a typical installation). Also note that the COM profile can also be used to connect to apps running on Android or Windows mobile devices.

TracKing-1 information

If required, information about the TracKing-1 Bluetooth settings and status can be displayed (Figure 9). To display information, on the Bluetooth menu use the right arrow key button  to move to “information”  and press the “ON” button.

The information shown are:

- Device name: this is the Bluetooth name that is displayed on other Bluetooth devices that “discover” the TracKing-1. Included in the name of the device will be a three-letter code that shows the profile selected: “KWG” for keyboard wedge, “COM” for serial interface and “IAP” for iOS.
- Bluetooth network address
- Security PIN code
- Currently used profile
- Bluetooth status (“discoverable”, etc.)
- Host: the address of the device connected to. This will read “not available” if there is no device connected



Figure 9

Press “ON” to return to the Bluetooth menu.