



Bluetooth Light Gun

Please also see the Aimtrak Setup Guide at :

[www.ultimarc.com/AimTrak Setup Guide.pdf](http://www.ultimarc.com/AimTrak%20Setup%20Guide.pdf)

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Section 1: Introduction

Features

- No special drivers or application changes needed.
- Configuration utility allows the trigger and buttons to be configured as gamepad buttons or mouse buttons.
- Configuration information is sent “over-the-air” from a PC equipped with a standard Bluetooth interface.
- Configuration utility interacts real-time with the device and all settings stored instantly in Flash ROM.
- Advanced power-saving design features with standby power permitting battery life of several weeks.
- User-upgradeable “over-the-air” firmware for future enhancements and customizations.

Bluetooth SIG Qualification.



This product has passed compliance testing and is fully qualified as an “end product” by Bluetooth SIG (Special Interest Group)

Details are:

QDID (Qualified Device ID): 81294.

Declaration ID: D030542

Section 2: Charging

A USB charging cable is provided, which can be plugged into any USB charger or port. Charging is rapid and should be completed in 30 mins or so.

Important note: The unit is designed to only be charged rather than used when connected to a USB port. Signal degradation will likely occur which may prevent effective use while charging.

Section 3: Bluetooth Host Connectivity

Tested Host Systems

The Bluetooth Aimtrak has been tested with the following hosts:

PC Windows 7, using the CSR 4.0 Bluetooth dongle with CSR PC software supplied with the dongle.

PC Windows 8 and 10, using the CSR 4.0 Bluetooth dongle *Do not install supplied CSR software* as Windows 8 and 10 have Bluetooth 4 support.

IOS All recent versions

Android All recent versions

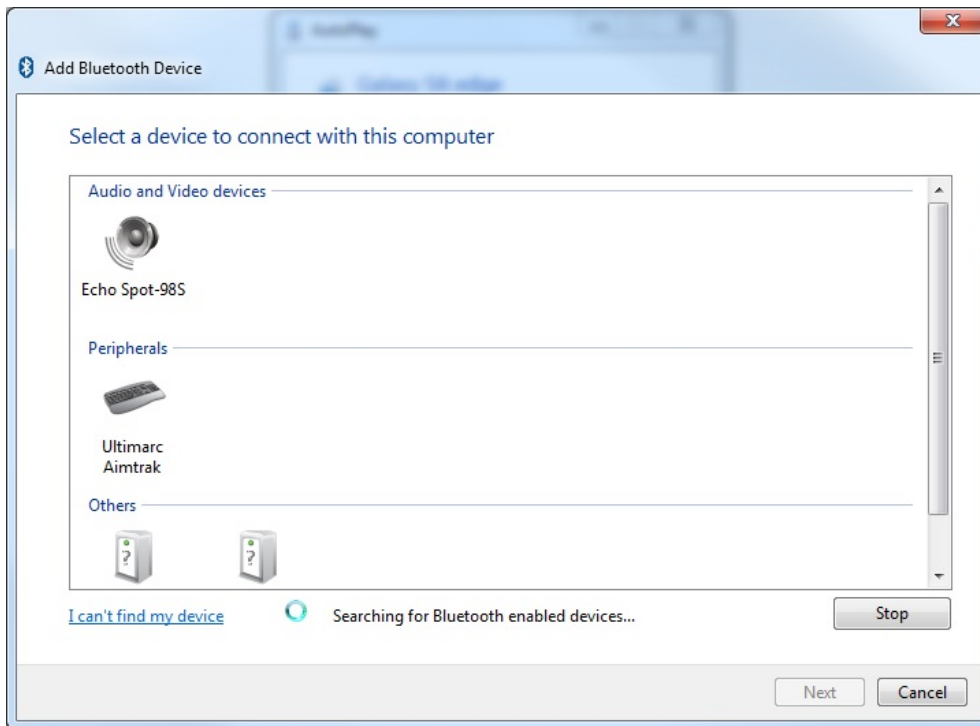
MacOS All software and hardware which supports Bluetooth 4

Other OSes should operate but have not yet been tested at time of writing.

Note that not all Bluetooth 4 adaptor host software supports the composite-HID-over-GATT format which this device uses. We recommend using the CSR dongle, which has full support.

Connecting to the Host

When the Aimtrak is powered up, or when trigger is activated, the board will start to advertise its presence to the host system. During this time, the host needs to be told to search for devices. It should discover the device:



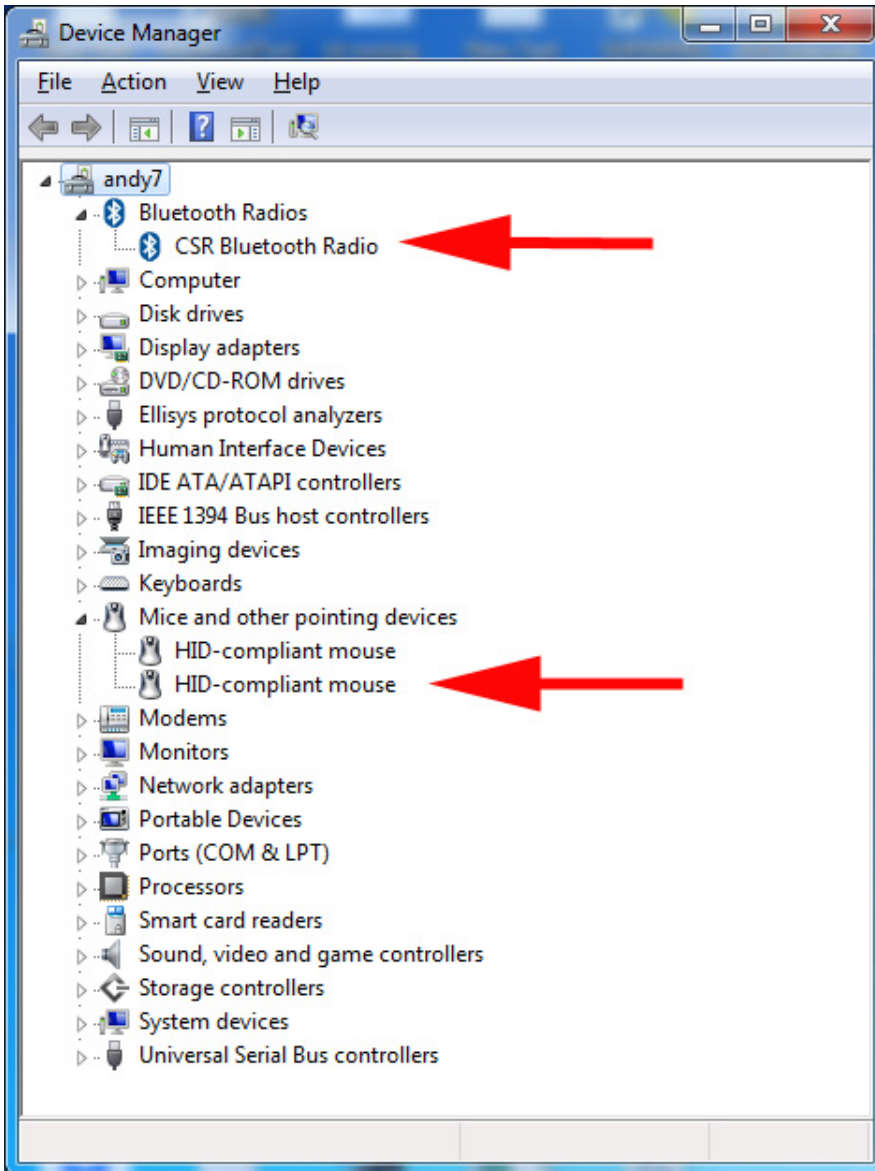
The next step is to select the device and pair with it. A temporary key is exchanged and an encrypted connection is set up.

When the device loses connection, or resumes from power-saving mode, it will automatically reconnect without intervention. The stored encryption keys are re-used.

Recovering from no-connect situation or device not being correctly detected.

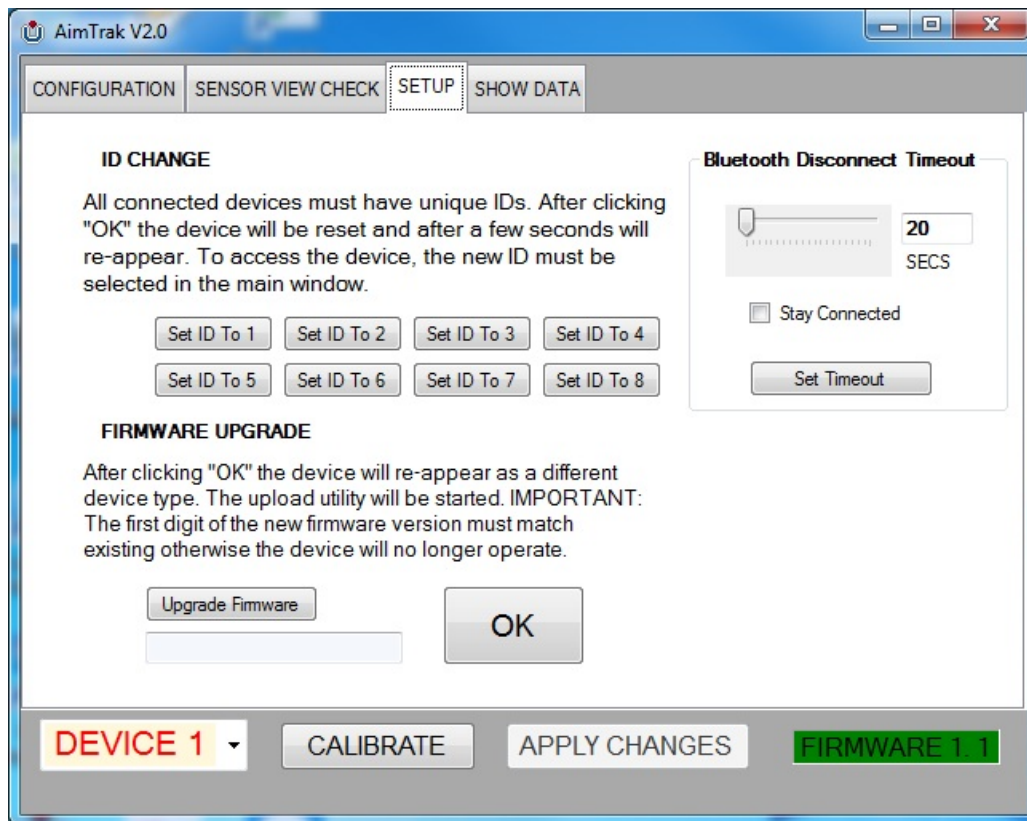
The device should show as an additional HID mouse in device manager.

To reset the device and connection and clear bind information, open Device Manager in Windows and right click and uninstall the Bluetooth Radio as shown. Do not check the “delete drivers” tick box. Then at the top “Scan for new hardware”Go through the scan and bind process already described.



Section 4: Bluetooth Configuration

These settings are located on the “Configuration” tab of the Aimtrak utility



The slider defines how many seconds of no-activity elapse before the unit disconnects the Bluetooth link. Or you can opt to have the device never disconnect but this will consume much more battery power.

The device will re-connect after sleep, when the trigger is activated. This takes less than 1 second.

Different device IDs can be assigned and this should be done when using more than one, on a host system. Note that the ID defined here only affects the visibility of the device in this utility. The Bluetooth host will automatically assign functional IDs to each device based on the device unique address. All are sent out with unique addresses.

Section 5: Upgrading Firmware

Note the “Over The Air” firmware update procedure has been tested using the CSR 4.0 dongle with CSR-supplied host software, on Windows 7 and also without any host software on Windows 8 and 10.

The “Upgrade Firmware” button causes the board to change to a different Bluetooth device and reset.

The firmware upgrade procedure is as follows:

1. Ensure the board is connected in normal mode and not in power-saving mode (make it active by using a control if necessary)
2. Run the Aimtrak program
3. Select “Upgrade Firmware”
4. Accept the OK prompt.
5. Open the “Bluetooth devices” dialog in Windows
6. Search for new devices. An “Ultimarc Loader” device should be found.
7. Click on the new device to bind to it.
8. If not already running, go to the U-Config install folder and run the program called “Blueupload.exe”.
9. Select the new firmware file from this program and the upgrade should start.

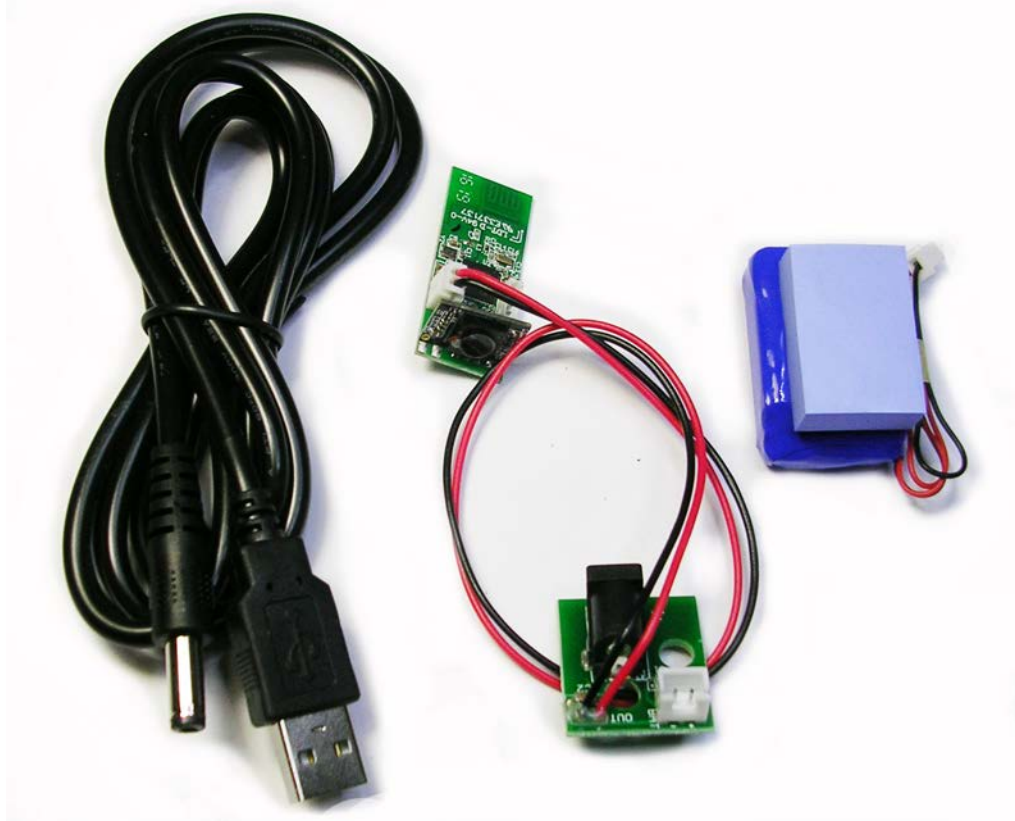
Section 6: Fitting Upgrade Kit

Note this kit does not support recoil and we do not recommend fitting it to a recoil-equipped unit.

USB and Bluetooth devices can be used together on one host but the Aimtrak software utility will not function with both connected.

Kit contents:

- Replacement sensor module
- Charging cable
- Charging board
- Battery
- Heat-resistant silicone foam



Place unit on desk as shown and remove 7 screws. Lift off top (Right side)

Remove existing sensor module and USB cable. These are no longer required.



The next step depends on version.

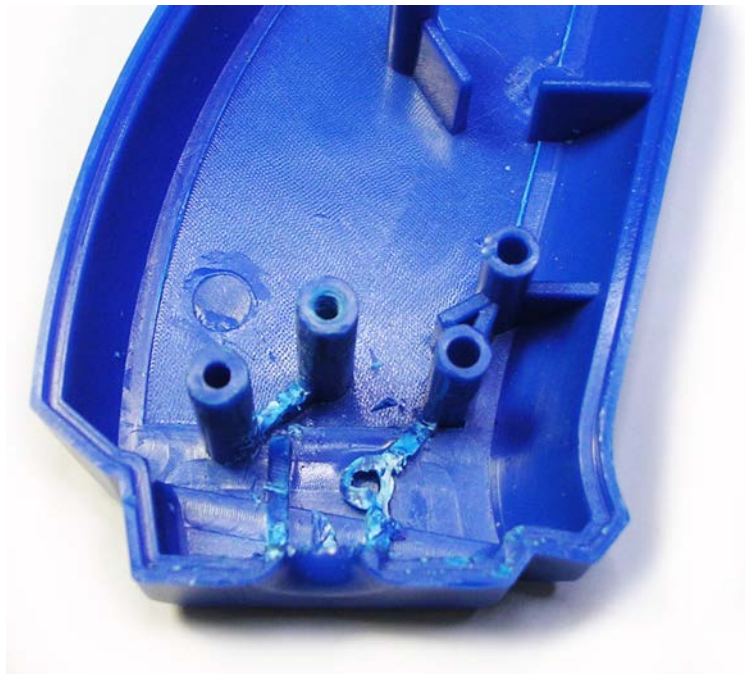
Later housing versions will not require this step as they are already modified in production, in preparation for this kit.

If the housing is older, it will have a number of internal ribs which need to be removed.

The end result should be as shown.

This can be done using a combination of modelling knife, side cutters and pliers. It is quite time-consuming and takes 20 mins or so.

The end result should look like this (later versions already will be this design):



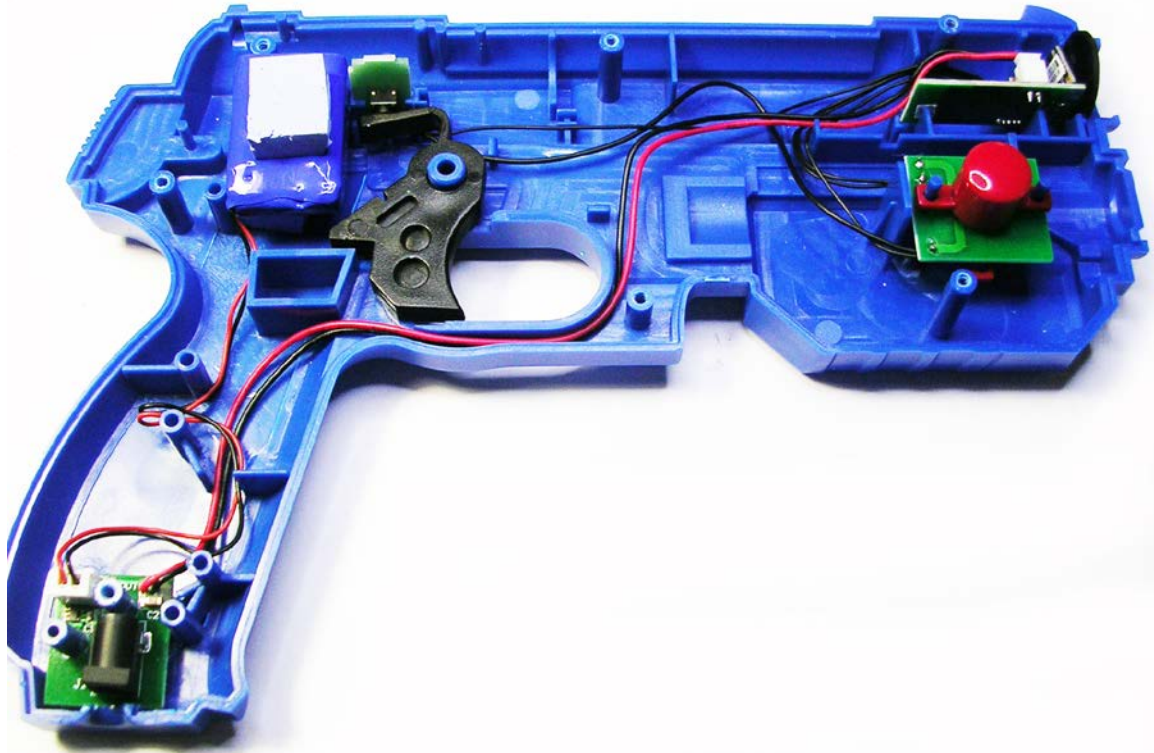
The charging PCB should fit right down to the base, so the connector lines up with the hole.

Remove adhesive cover transparent foil from front of sensor module lens.

Fit the charging board, connect power cable to module and fit the module.

Connect battery.

Cut the supplied silicone foam into two pieces and place each side of battery in the position shown. Ensure the trigger is free to move.



Carefully route all wires making sure none are trapped by internal ribs. Ensure module is correctly seated in its slots.

Refit cover and screws (right side).

Charge for a minimum of 15 minutes then see the “Bluetooth connection” section.