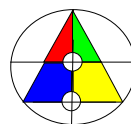


NANOrack

Installation manual

version 1.04, May 2010



TRACK'AIR
Aerial Survey Systems

<http://www.trackair.com>

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1 INTRODUCTION

The NANOrack is a new entry-level aerial survey flight management system designed to manage the planning and acquisition of aerial photography. The NANOrack is an affordable system derived from the proven X-track system, which is used, by more than one thousand mapping companies and governmental agencies worldwide. The NANOrack does not have all the numerous capabilities of X-track but in most cases the system will be adequate to handle any photo job.

NANOrack will initially be offered in 5 different versions, covering most known survey cameras from small format digital cameras to the latest large format mapping cameras.

This manual will explain all functions of the NANOrack, though some of these functions might not be available for your specific setup, if a NANOrack with limited functionality was ordered.

1.1 components with NANOrack

Each NANOrack box is delivered with the following items included in the parcel:

- NANOrack unit
- USB cable
- 5Hz antenna on antenna mount
- client-specific camera cable
- CD with drivers and TRACKER software
- VGA screen with required cabling
- This manual

1.2 NANOrack connections and functions

The NANOrack unit has 4 connections to the outside world, a short description of each is shown below:

The USB connection allows the NANOrack unit to be connected to the computer.

The GPS connection is a 7-pin LEMO connection where the external GPS receiver-unit should be connected.

The CAMERA connection is a 14-pin LEMO connector that connects to one of the various camera cables available for NANOrack.

The **Mid Exposure Pulse** connection is a standard BNC female connector where the camera event is made available as a **falling edge TTL pulse with a duration of 10ms**.

1.3 connecting the cabling

NOTE: Always make sure that all cabling is connected to the NANOTrack BEFORE connecting the unit to the USB port of your computer!

The cable is a 300cm/10ft long and on the computer side it connects to a standard USB1.1 or USB2.0 type 'A' connection of any computer. This connection **must** be able to supply **500mA** of power as per the USB standard. Do **not** use any other device on this same USB HUB of your computer as this may take power away from the NANOTrack and cause the GPS to fail.



On the NANOTrack side the cable should be connected on the box to the 'mini B' type connector using the screw coupling of the cable. This provides a secure locking that is IP68 rated, and therefore dust and waterproof.

Next to the USB connection is the dust-cap protected LEMO connector where the 5Hz external GPS receiver will be connected. The LEMO is connected with its well-known push-pull self-latching system. The antenna itself can be mounted to the roof of the aircraft using the attached mounting-system. One single hole with a diameter of 16mm is sufficient to mount the antenna. The 500cm cable then can be guided through the aircraft for a permanent installation.

[image here]

On the other side of the NANOTrack unit is the second dust-cap protected LEMO connector, this connection allows the connection of various camera cables available for NANOTrack. The camera-cable specifications are described in a specific add-on to this manual since the camera cable is specific for your specific application.

[image here]

The BNC connector next to the camera connection outputs the **Mid Exposure Pulse (MEP)**. The signal is always a **TTL falling edge pulse with 10ms** duration. The timing of this event is accurate with the actual event from the camera. An external DGPS unit for time-tagging events can be connected here.



NOTE: the MEP output is only activated when the NANOTrack is of the 'PRO' type, the NANOTrack 'basic' and 'plus' versions do not output the MEP event!

2 THE INSTALLATION

The installation CD will auto-run when inserted in the computer, the TRACKER software will install automatically.

The NANOTrack needs drivers to be properly detected by Windows and snapSHOT. The drivers are on the installation CD delivered with the unit.

The display unit delivered with the NANOTrack set (optional) also has a touchscreen function. If you want to use the touchscreen function also the touchscreen drivers must be installed.

When using an FTP downloaded installer, unzip any ZIP files to a local hard disk folder (unzip including subfolders), and read this manual replacing CD by the folder you unzipped to.

2.1 installing the TRACKER software

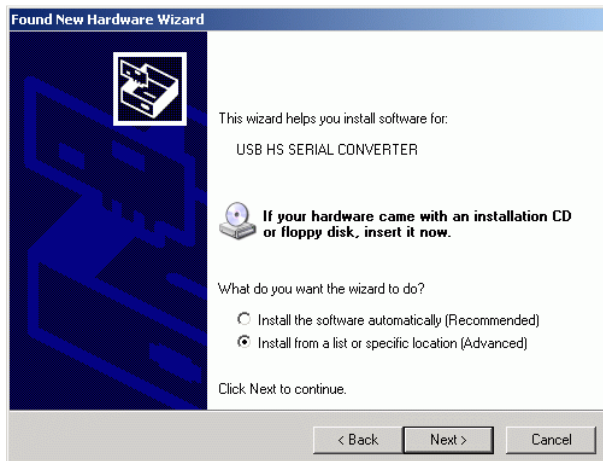
The installation CD normally will auto-run when inserted in the computer. If the computer is setup not to do so, please right-click on the drive where the CD is inserted and select 'TRACKER32 installation' from the drop-down list to install the software. After entering your license password the installation will be easy. The installer will create a new folder in your start->programs menu, called TRACKER32. In there the shortcuts for the various programs can be selected and the program executed. This manual will not describe in detail all software packages and their functions.

2.2 installing the NANOtrack drivers

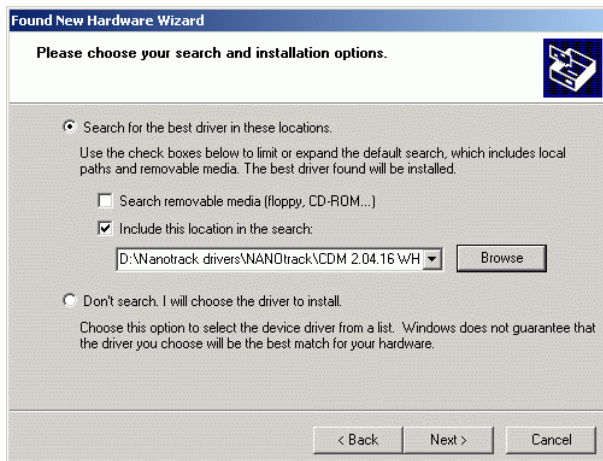
After connecting the USB connection of the NANOtrack to the computer (*always make sure all cabling is connected to the NANOtrack BEFORE connecting the unit to your computer!*) the computer will detect that new hardware is connected.



Select 'No, not this time' and press 'Next>'.



Select 'Install from a list or specific location' and press 'Next>'



Select 'Search for the best driver in these locations' and only select 'Include this location in the search'. Click the 'Browse' button to browse to the folder:

[CD]:\Nanotrackdrivers\usbdrivers
(or similar if using a ftp downloaded zip file)



Press "OK" (image for reference purpose only, actual folder may be different!)



Press "Finish"

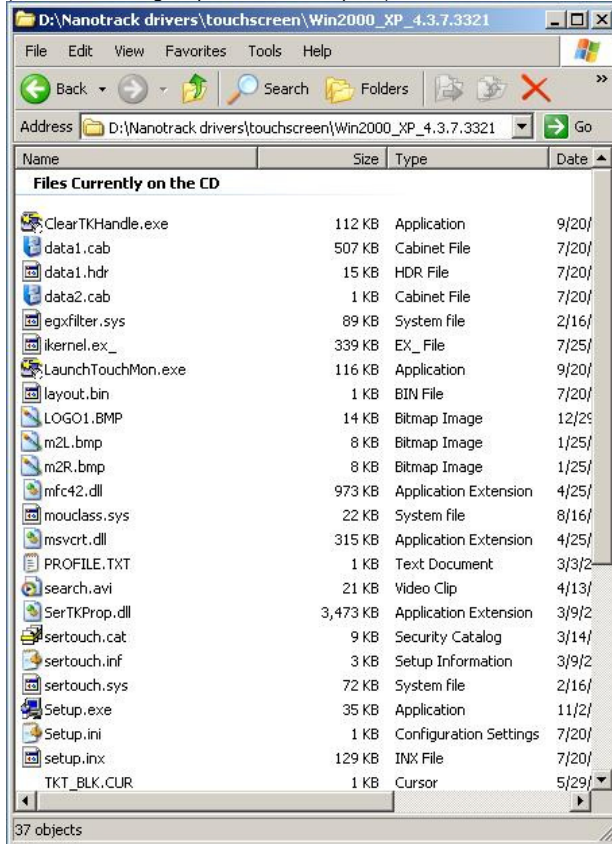
This whole procedure will have to be repeated once more to install both devices properly. This process has to be done only once, after that your computer will be able to automatically detect the NANOtrack.

2.2 installing the touchscreen drivers

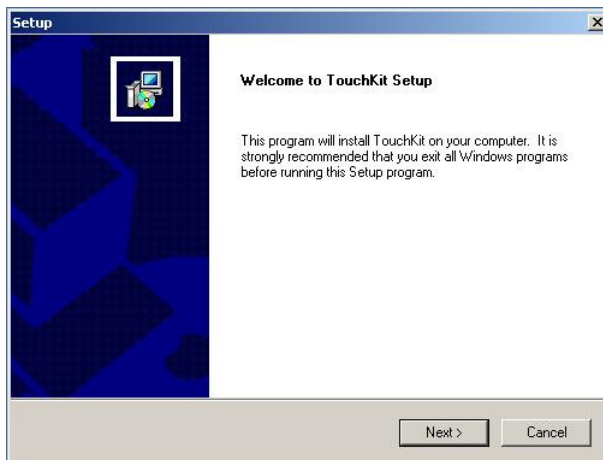
Do NOT connect the display until instructed to do so!

Insert the installation CD, open an explorer window, select the CD drive and browse to the folder [CD]:\Nanotrackdrivers\touchscreendrivers\Win2000_XP_4.3.7.3321

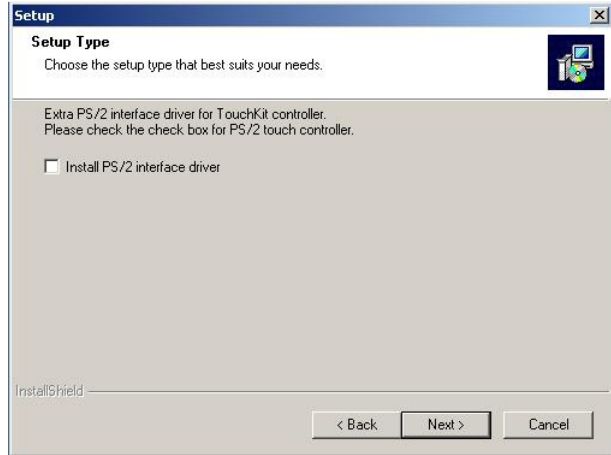
(or similar if using a ftp downloaded zip file)



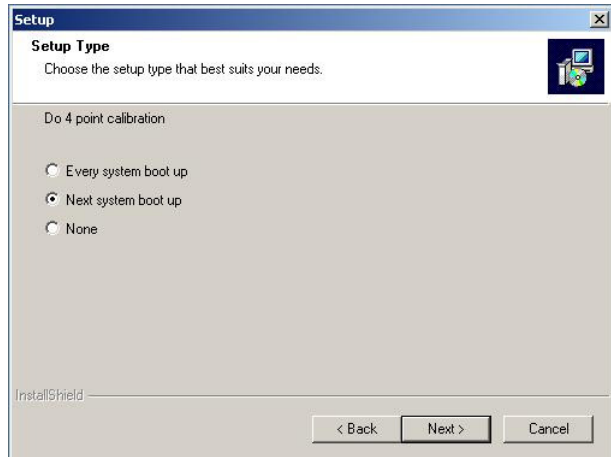
From this location run Setup.exe.
(image for reference purpose only, actual folder may be different!)



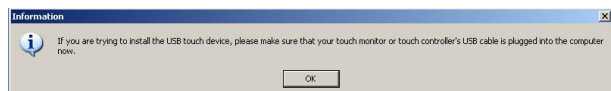
Follow the instructions and press "Next".



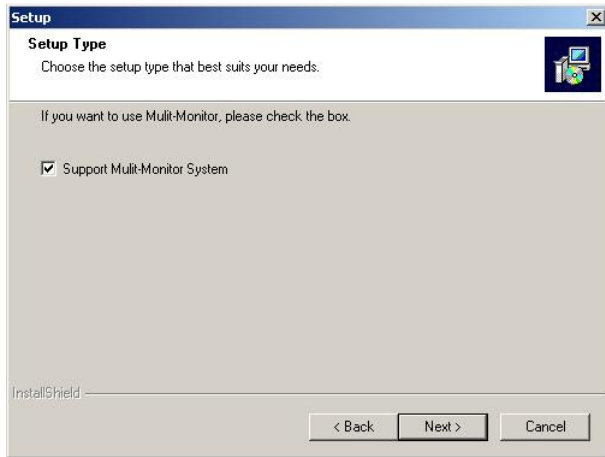
Do NOT install the P/2 interface driver (press "Next")



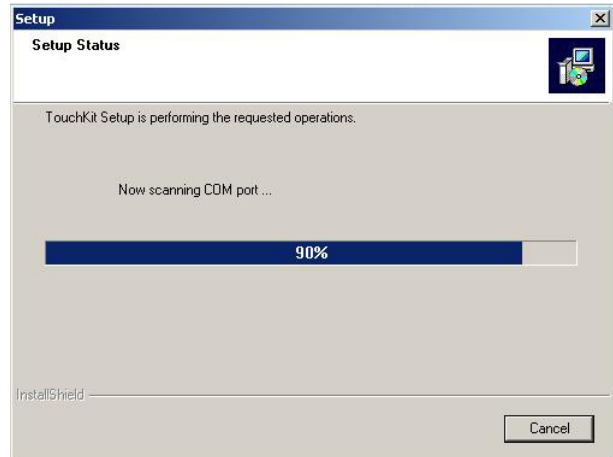
Select "Next system boot up" (and press "Next")



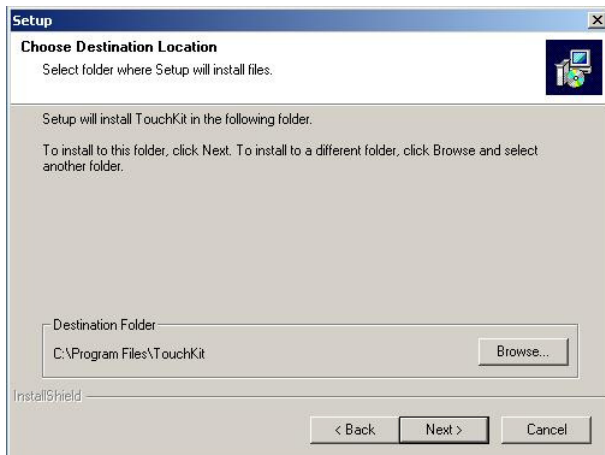
By now, connect the touchscreen VGA and USB connector to your laptop. Make sure to power (24V) the display as well. Then press "OK"



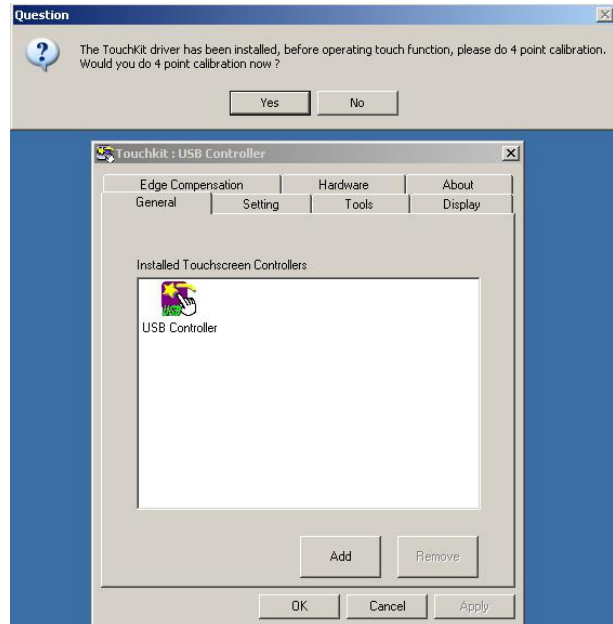
Check the Multi-Monitor System option and press “Next”.



Wait for this process to finish...

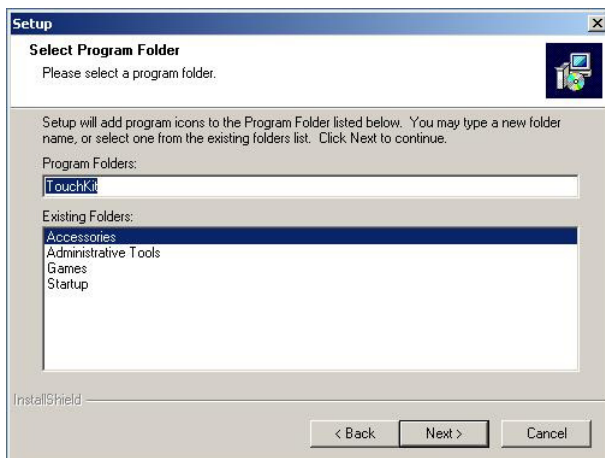


Select or accept the installation folder and press “Next”



Before pressing “Yes”, your displays now have to be setup in such a say, that the new display is a duplicate (clone) of the laptop display. Setting this is different per laptop/Video graphics drivers and may require you to start the video graphics configuration application. If instructions are available, follow guidelines for setting up a video beamer.

Once the new display is clone of the laptop display you can press “Yes” to do a 4-point calibration.



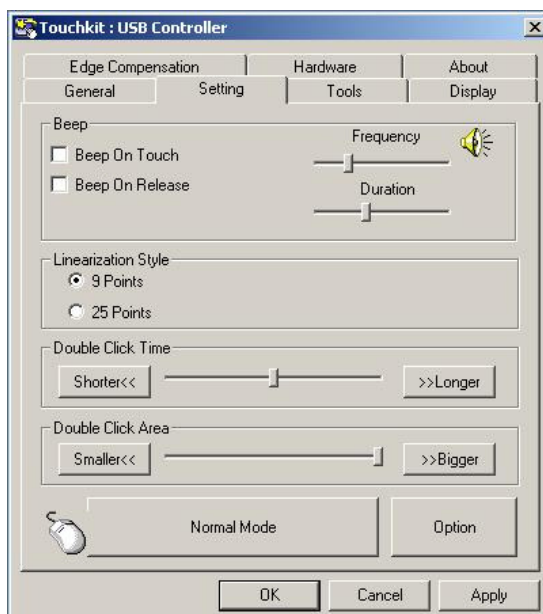
Select or accept the program “startup” folder to install and press “Next”

3 FAQ

Q: I wish to get more out of the system or have more features from the regular X-Track system. How can I do this?

A: *There is complete upgrade path available to X-Track or PosTrack.*

Perform the 4-point calibration as instructed by the program on the new display.



Change settings as needed, but at least make sure the system does not beep on touch or release.

Press "OK" when ready.

Reboot the PC.

The system is ready to be used.

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