

Quick-Guide ► Fingertracking2 / Tactile

Included in delivery:

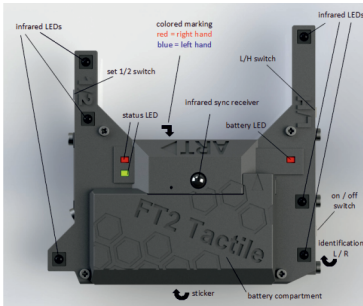
- ✓ 2 active hand targets
- ✓ 1 battery charger
- ✓ 3 active finger thimble sets for right hand (red marking)
- ✓ 3 active finger thimble sets for left hand (blue marking)
- ✓ 2 packs of 4 AAA rechargeable batteries (1,2 V)

Safety advice:

- Do not install or use in case of any equipment damage.
- Insert batteries in the indicated polarity.

1 Fingertracking hand target

Fingertracking hand targets consist of infrared LEDs, an IR receiver for wireless synchronization, a battery compartment and a connector for the finger thimble sets. The tactile models additionally feature a radio module for addressing the vibration motors.



The status LEDs provide the following information:

LED	STATE	STATUS
green	on	synchronized and tracking
yellow	blinking slowly	not tactile: no active tracking
yellow	blinking slowly	tactile only: not assigned to a controller
yellow	blinking fast	tactile only: indicates radio communication
red	on	batteries low

The 3 switches allow the following functions:

SWITCH	FUNCTIONS
ON/OFF	turn on/off hand target
L/H	select brightness of IR LEDs Low -> battery saving mode High -> when camera distance > 3m
1/2	select target geometry to set up a second pair

Info: The serial number of the hand target / tactile device can be found on the bottom-side of the hand target and is useful while validating the connection.

Warning:

Select the Set 1 or 2 configuration of the Fingertracking2 or Fingertracking2 Tactile hand targets during first-time installation only. Do not change the setting during routine operation or tracking will fail.

2 Connecting the thimble sets

Plug in the connector of the finger thimble sets into the hand target. Connect the correct thimble set to the corresponding hand target by verifying the coloured markings (red & blue). Then apply the finger thimbles to your thumb and fingers observing the order of the flexible wires.

Info: Watch out for the coloured marking of the thimble set: red=right hand, blue=left hand

3 Inserting the batteries

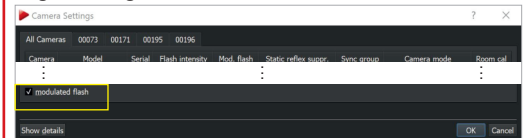
Open the battery compartment and insert the AAA batteries in both hand targets.

4 Camera settings

Select 'Hardware' -> 'Cameras'.

DTRACK3: select „Modulated Flash“ for all cameras (if a warning occurs, continue with „Yes“).

DTRACK2: select „Modulated Flash“ for one camera that is assigned to sync group 1 and has good line of sight to the Fingertracking hand set.



5 Fingertracking settings

Select 'Tracking' -> 'Fingertracking' and configure the number of hands you want to use with your tracking system (up to 4).



6 Body Calibration

Open the sub-dialog 'Fingertracking' -> 'Body Calibration via Target Library' to calibrate and assign each hand target to a selected Hand ID.

- switch on all hand targets and place them inside the tracking volume
- press 'Start search' to run the automatic target recognition feature.
- Identified targets will be marked green on the right side of the window.
- for each hand target mark the respective hand ID and the appropriate target geometry by left-clicking and press 'Select' to assign the corresponding body calibration.
- after selection the entry in the column 'Cal.' will turn into a yellow tick.

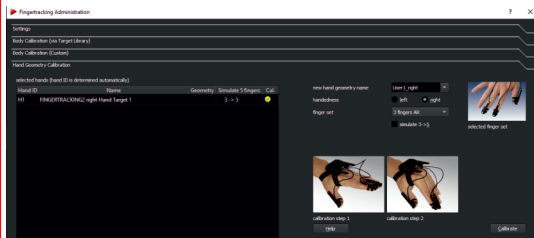
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7 Finger Calibration

Open 'Tracking' → 'Fingertracking' → 'Hand Geometry calibration' to calibrate the handedness as well as the position and orientation of the finger tips. Finger calibration can be done only after body calibration.

Important: Make sure that only the hand target you are calibrating is activated or visible to the cameras!

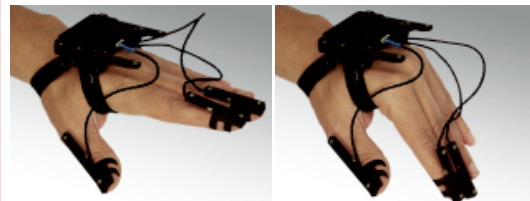
Enter all details such as name, finger set & handedness. Press 'Calibrate' to start the two-step calibration process.



The calibration process is divided into two steps:

In the first phase (calibration step 1):

- all fingers have to be stretched out (see below picture).
- the thumb has to be spread away from the hand.
- do not spread the other fingers, keep them together. Make sure that there is no space between them.
- do not move any finger nor the thumb during the first calibration phase:
- you may move the entire hand slightly.



A progress bar shows the status of the calibration.

During the second phase (calibration step 2):

- keep the fingers stretched out (see below picture).
- keep the thumb spread away from the hand.
- keep the other fingers close together.
- gently move all of your fingers up and down at the same time until the calibration process is finished. The thumb is still spread away from the hand and should not be moved during this phase.
- do not bend or cross your fingers.

Info:

Try to achieve an angle of approx. 60° between up and down position of the fingers.

If calibration step 2 fails, please take care not to bend your fingers and not to move the thumb too much.

After successful calibration the entry in the column 'Cal.' will turn into a green tick. Simply repeat all steps for each tracked hand in your system.

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Output Settings

In DTRACK select 'Tracking' → 'Output'. Tick the checkboxes 'active', 'gl' and 'glcal' to transmit the Fingertracking data. Accept the changes and press 'OK'. Otherwise, the data will not be transmitted.

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Fingertracking display

In DTRACK select 'View' → 'Fingertracking' to see the measured coordinates of the fingers.

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Click 'Start' button to start the measurement.

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Tactile models only

Set up an ART RadioTransceiver3 first when using Fingertracking2 Tactile devices (refer to the ART Hardware Installation Guide → Other equipment → Radio Transceiver).

Open sub-dialog 'Fingertracking' → 'Tactile Assignment' to assign a tactile device to the corresponding Hand ID. All available tactile devices will show up on the right side of the window sorted by serial number.

- activate the checkbox 'tactile Fingertracking active'.
- mark the respective hand ID and the appropriate entry under 'available tactile devices' (doublecheck the serial number on each hand target) by left-clicking and press 'Select'.

The 'Model' and 'Serial Number' entries will be updated accordingly.

Feedback gain

Feedback can be adjusted using a global gain setting, i.e. the feedback used inside the application is multiplied by this value. Activate the slider Feedback Gain by double-clicking, then move it to the right to increase the gain setting, move the slider to left to decrease it respectively.

Please refer to the DTRACK3 Programmer's Guide → Input of Control Data via Ethernet for more information about setting the feedback strength.

Tactile test

To test feedback, open 'Fingertracking' → 'Tactile Test'. Mark the respective Hand ID by left-clicking. Then press the button 'Test hand'. The tactile thimbles will be activated sequentially from thumb over index finger to middle finger.

Please refer to the Hardware Installation Guide and the Users Guide for more information. If you need further assistance please do not hesitate to contact our support.