

# Quick-Guide ARTTRACK5 & DTrack2

01 / 2015

## Security advice:

Do not use any components if they appear damaged.  
Do not use any other than those supplied with the system.  
Keep a distance of min. 20 cm when operating the camera! The camera is assigned to the Exempt Group according to IEC62471-1 and therefore poses no risk or hazard to the human eye or skin at this distance.

## Standard accessory

- 1 Patch cable RJ45 15m
- 1 ceiling suspension D2

## Important note:

The tracking system is very sensitive to camera movements. Therefore, the cameras should be securely mounted to eliminate movement. A camera rotation of just 0.1° will make camera data worthless for tracking in most cases.

Factory trained engineers are available to help with the planning and installation of your ART system. Call your ART representative for more information.

- 1 Mount the cameras at the desired position before connecting the patch cable!  
Connect the ARTTRACK5 with the ART Controller (ATC) using the RJ45 cable.



## Synchronization:

Default setting is internal synchronization. Some applications (e.g. active stereo projection) require external synchronization. Use the "Ext.In" BNC plug as external synchronization input. In DTrack2, select "Settings" → "Synccard". You can select the type of synchronization which fits to your application out of "supported synccard modes".

If you want to avoid mutual blinding of cameras, you may use different sync groups. Please refer to the user manual for more details.

- 2 The ATC is controlled by a host PC via DTrack2 frontend software. When delivered, the ATC is set up to support DHCP. Connect it to your local Ethernet (E) and to a power socket with 110V/xxA - 230V/16A (P).



(P)

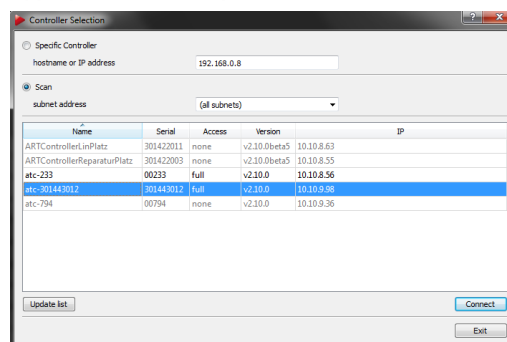
Press the switch (S) on the front of the ATC to start it. If the ATC is booting without connected Ethernet cable or if a DHCP server is not available, it will use its standard IP address (192.168.0.1) and subnet mask (255.255.255.0).



Status-LED  
Reset/On-Off

It is possible to configure the IP address of the ATC without the DTrack2 Frontend. You only need a standard USB flash drive (FAT32 formatted) on which you save a setup file (for the format please refer to the user manual) and plug it into the ATC.

- 3 Install Dtrack2 in the host PC. Start DTrack2 on the host PC. You can either address your ATC directly (via hostname or IP address) or scan the network in order to find it. Identify the used ATC by the serial number which is printed on the label on the back. Select the appropriate ATC and press "Connect".



The latest Version is available in the ART Download Center:  
(<http://www.ar-tracking.com/support/>).

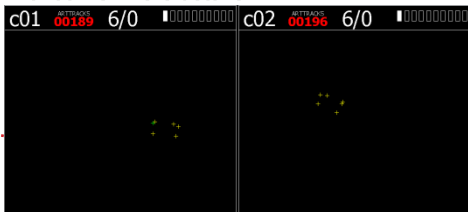
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## Room calibration:

Select "Calibration" → "Room".

The "Monitor 2DOF" view is started in the background. Two cameras at least should see four markers (→ angle) plus two belonging to the wand (i.e. markers seen = 6). Reduce other reflections to a minimum before starting the room calibration (i.e. markers seen > 6). Please refer to the user manual for more details.



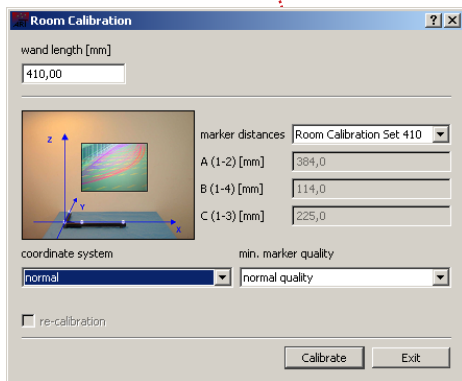
Enter values for room calibration:

Wand length → see label on the wand

Marker distances → room calibration set 410 / 710

Coordinate system → according to your setup

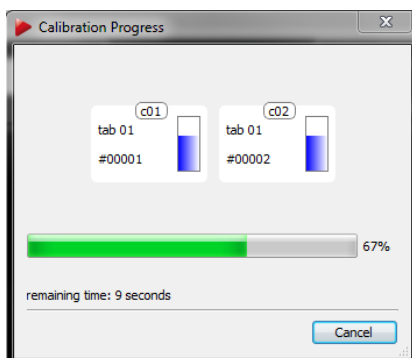
Min. marker quality → normal quality (recommended)



Press "Calibrate" and the calibration starts within 5 seconds.

Move the wand gently in the measurement volume, in order to generate a virtual point cloud. This point cloud should fill at least about two thirds of the measurement volume. It is used for calculation of IR cameras positions. So, moving the wand in only a very small volume will result in reduced accuracy of calibration.

The progress of the room calibration is shown on the host PC's monitor and directly in the cameras (0-99%).



After a successful room calibration, the DTrack2 info window with the calibration results is displayed. The number of valid frames should be greater than 70% for each camera.

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## Body calibration:

Define the desired number of rigid bodies in "Settings" → "Body Administration" → "number of 6DOF standard bodies".

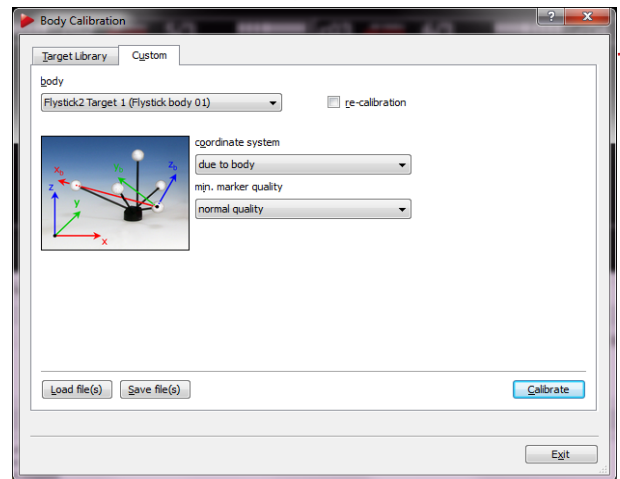
You can either perform a body calibration with the tracking system (1), use the tracking library or load a body file (2).

(1) Place the body within tracking range of the cameras. The cameras should see each marker of the body. Remove disturbing reflections before starting the calibration. Please refer to user manual for more details.

Select "Calibration" → "Body" and define the orientation of the body coordinate system relative to the body.

Press "Calibrate" and the calibration starts within 5 seconds

(2) In DTrack2, select "Calibration" → "Body" → "Load file(s)" (body calibration files are available on request)



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## Output settings:

Now, that you have set up the tracking system correctly, it is time to define where the data has to be sent to.

In DTrack2, select "Settings" → "Output". You can either select "this computer" (remote PC) or enter an IP address of the computer you want to send data to. By ticking the checkboxes you can define the data to be transmitted.

Press "Start" to start measurement.

Please refer to the user manual for a more detailed description of the ART tracking system. If you need further assistance please do not hesitate to contact our support:

A.R.T. GmbH  
+49 (0)881-92530-00  
<http://www.ar-tracking.de>

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