



Security advice:

▪ Do not stare into the LEDs of the active markers - they emit IR radiation.

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Included in delivery:

- ✓ 1 active marker station (AMS1)
- ✓ 4 active flat markers (AFM1)
- ✓ 1 external receiver for IR sync signal (ESR1)
- ✓ 1 battery charger

The active marker set can be used for individual applications, especially when flexibility is necessary. In order to use the active marker set some settings within the tracking system have to be made.

SOFTWARE

1

Activating the modulated flash

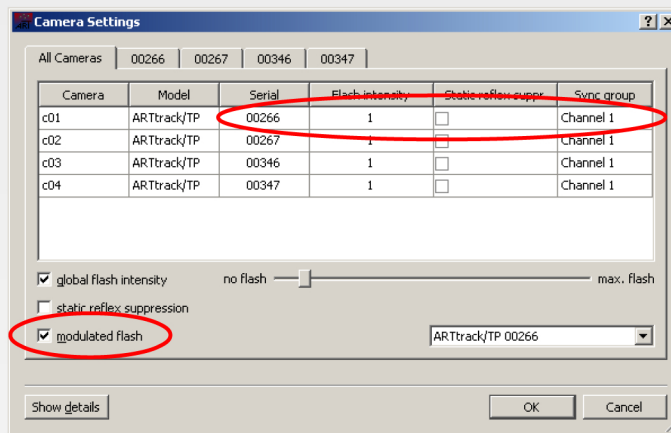
In order to use the active markers one camera, which has to be on syncgroup #1, must be configured to emit the modulated flash.

Therefore, go to "Settings" → "Cameras". In the general tab on the lower left, you can find the option "modulated flash". Tick the checkbox and select one camera which is on syncgroup #1.

Note:

If you are using an ARTTRACK system the camera has to be connected to the "OUT1" port at the back of the ARTTRACK Controller via BNC.

For a TRACKPACK system you can define the syncgroups for the cameras via software (i.e. "Channel 1" corresponds to syncgroup #1) in the camera settings dialogue.



2

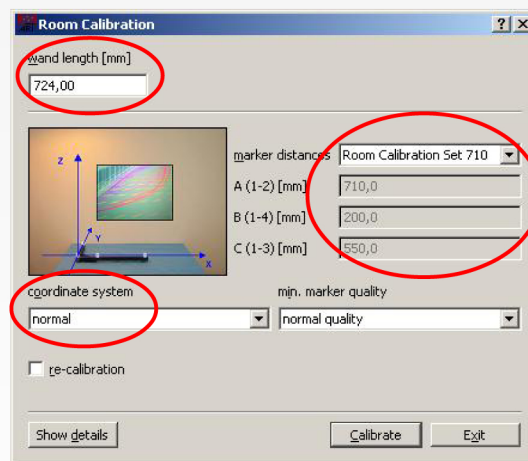
Performing a room calibration

For room calibration, the calibration angle of the room calibration set is inserted into the field of view of the IR cameras. The position of the calibration angle defines the room coordinates. At least two IR cameras have to see all markers of the calibration angle.

Therefore, DTrack2 's Monitor 2DOF display is started in the background when selecting "Calibration" → "Room". Here you can verify that all markers of the angle are seen by the cameras.

The pre-calibrated stick carrying two markers is called the "wand". Its function is to create a virtual "point cloud" in the measurement volume that is used for calculating the relative positions of the IR cameras with high accuracy. Besides, the wand length is scaling the system. The room calibration dialogue allows the input of the marker distances of the calibration angle, the input of the wand length and marker quality, the input of the offset and the input of the calibration type.

Marker distances of the calibration angle can also be set manually using the option "expert".



HARDWARE

1

The active target set consists of the active marker station, the external IR receiver and the single active markers. The active marker station (= AMS1) is powered by rechargeable batteries which have to be recharged with the supplied battery charger.

There are two possibilities to synchronize the AMS1 depending on the type of usage:

- 1) *outdoors* → external IR receiver is recommended because of better sunlight shelter
- 2) *indoors* → built-in IR receiver may be used

The dip switches may be used to configure the AMS1 as follows:

- position 1: enable/disable built-in IR receiver
- position 2: enable/disable flashes for all syncgroups
- position 3-5: flash duration/intensity, only valid if position 2 is disabled

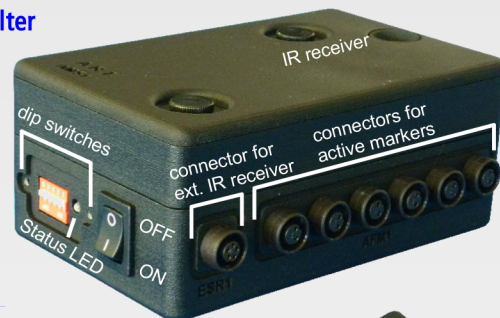
		intensity	pos 3	pos 4	pos 5
ON	1	1 lowest	0	0	0
	0	4 medium	1	1	0
DIP	1	8 highest	1	1	1
	2				
	3				
	4				
	5				

The status LED has three states:

- permanently green: synchronization signal received
- permanently red: synchronization signal invalid
- flashing red: no synchronization signal

Additionally, there's a battery check on start-up:

- permanently green (for about 1sec): battery ok
- quickly flashing red (for about 1sec): battery empty



2

Performing a room calibration

- wand and angle are driven by the AMS1 unit like the active markers
- position angle in room, in order to define proper room coordinates
- make sure that as many cameras as possible see the complete angle
- move wand in central part of tracking volume and make sure that at least two thirds of the volume are covered by the movement
- make sure that the two markers of the wand are seen by the cameras

