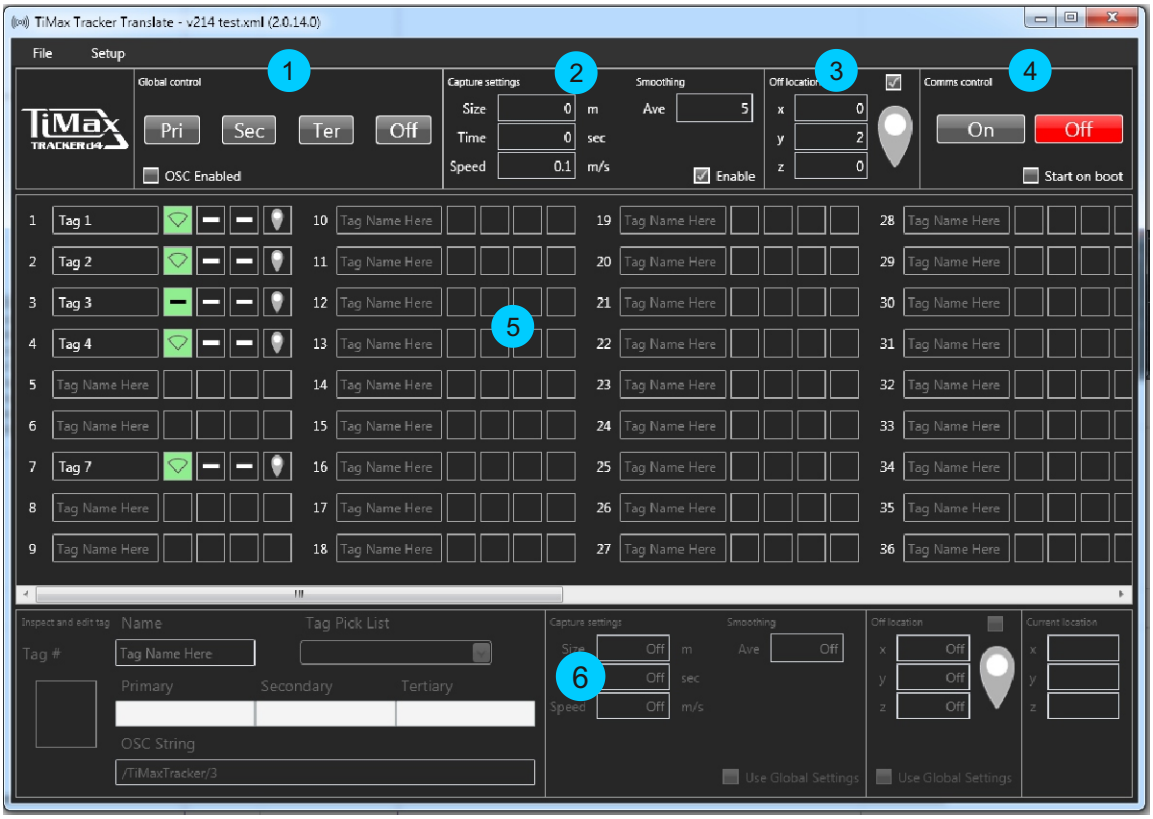
TiMax Tracker Translate

User Guide for V 2.1.24

TiMax Tracker Translate provides a GUI based PC application which converts a raw incoming location datastream from TiMax Tracker d4 and BlackTrax to an OSC format suitable to control TiMax SoundHub or PosiStageNet for lighting and media controllers.



1 Global selection of Pri/Sec/Ter/Off for all tags
Mutually exclusive, manually and OSC controllable.
Buttons flash when clicked on or remotely operated via OSC

2 Global Capture and smoothing settings
Capture **Enable**, when unchecked switches off smoothing and hysteresis for all tags using global settings and not tags using local settings.
Size sets the radius of the capture lock and breakout boundary 0=off 0.1m increments up to 5mTypical setting 2m
Time sets the capture lock activation delay if the tag remains within the capture area. Typical setting 2 sec
Speed sets the speed at which the capture area tracks the tag. Typical setting 0.2m/s
Smooting sets the number of readings over which a rolling average is taken. Typical setting 4

3 Global Off Position
Set x,y,z coordinates for position to which tags will be located if it is set to Off. If no coordinates are set then the tag will remain in the last seen location (can be set individually for each Tag, see 6 below).

4 Comms control
Provides manual means to start and stop OSC or PosiStageNet comms to TiMax SoundHub, DS100, lighting controller or media server, and means to automatically start when software boots.
Coloured button indicates selected mode.

5 Channel selection of Pri/Sec/Ter/Off for individual tags.
Individual, mutually exclusive, manual and OSC control of tag activity.

6 Inspector: setup and edit selected channel
Manually type tag name.
To add a tag, type, scan or select from pulldown pick list to add tag ID. Pick List automatically populates when Comms is Start-ed.
Enter the OSC string - remembers last used and defaults to /TiMaxTracker/1....n
For d&b Ds100 Soundscape control use /dbaudio1/positioning/source_position/[1-64]
Set tag specific number of readings for rolling average for jitter smoothing
Set tag specific Off location x,y,z when channel is switched off

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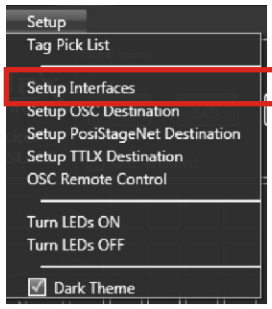
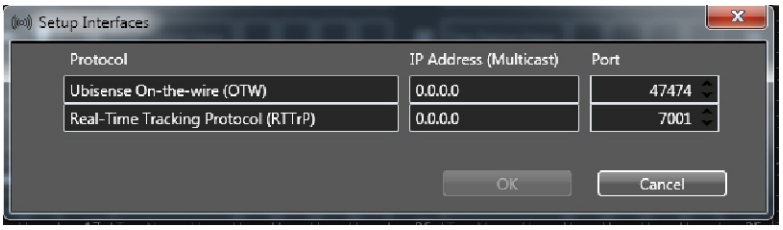
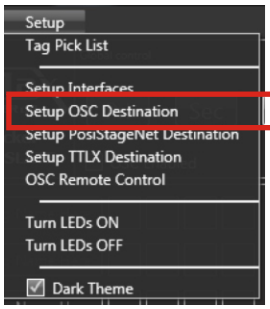
Initial configuration of TiMax Tracker Translate requires setup of of data sources and destinations.



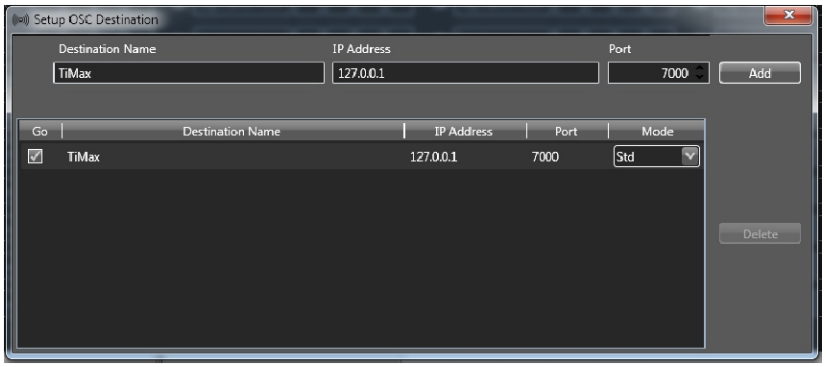
From the top menu bar, select Setup and Setup Interfaces



Setup Interfaces is where the Tracker Translate date receiver IP address and port are set - the default IP settings 0.0.0.0 will configure Tracker Translate to listen on all interfaces. The Ubisense OTW port 47474 should also be set in the TiMax Tracker d4 Location Engine Configuration software.

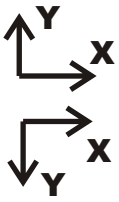


From the top menu bar, select Setup and Setup OSC Destination



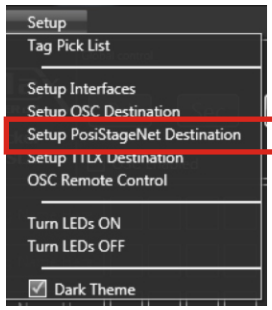
Setup OSC Destination is where the Tracker Translate OSC data output is sent to. This should be the IP address and port of the receiving TiMax SoundHub or Ds100. Multiple target destination addresses can be sent to facilitate multiframe installations or main / backup configurations.

Once an OSC destination has been set up, the coordinate system orientation can be set (z is always up):

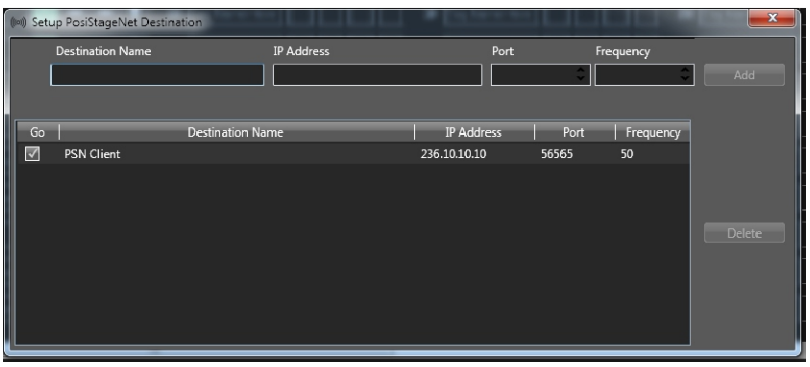


Standard - the x axis is left to right and the y axis is downstage to upstage as viewed from the stage front.

Rotated - the x axis is from upstage to down stage and the y axis is from left to right. This is for Ds100 control.



From the top menu bar, select Setup and Setup PosiStageNet Destination



Setup PosiStageNet Destination is a multicast address allowing PSN clients access to the data stream and should be set according to the client spec. The PSN frequency setting is the rate at which the PSN data is broadcast, this should be set to the same frequency as the tag blink rate.

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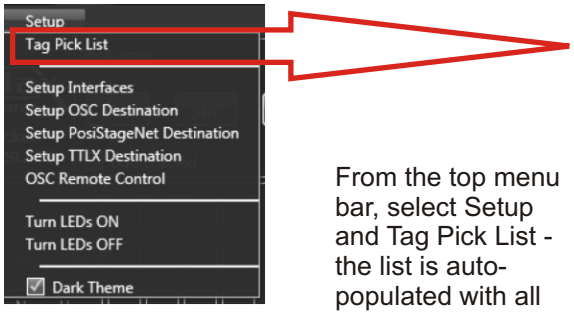
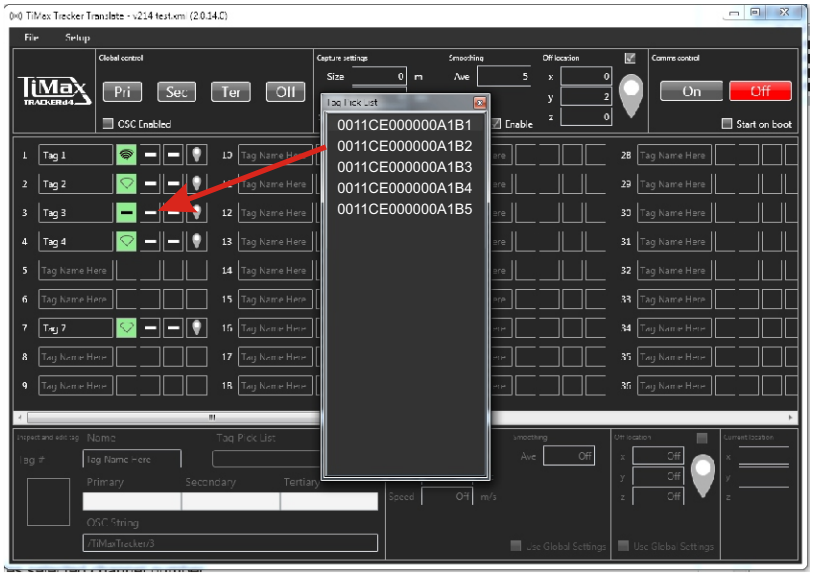
Assigning tags to control OSC data streams

Tags can be dragged directly from the Tag Pick List to a channel Primery / Secondary / Tertiary
Indication of activity and QoS of Pri/Sec/Ter tags... Refresh rate is 0.5Hz,
icon changes from to if no data activity, **-** indicates no tag assigned.
Click on Tag name or number to display & edit channel settings in Inspector.



From the top menu bar, select Setup and Tag Pick List - the list is auto-populated with all active tags (turned on and seen by Ttd4).



Each channel of control must have a unique OSC string - this can be set in the Inspector at the bottom of the main window. Click on a channel to focus the Inspector.

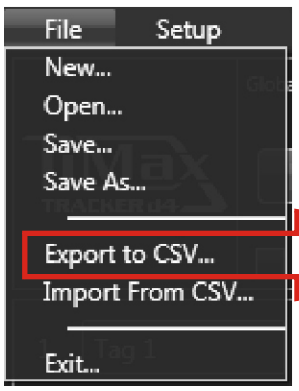
OSC messaging can be any format for TiMax control providing there is a unique channel number for each channel of control.

For d&b Ds100 the OSC messaging MUST be in the format /dbaudio/positioning//source_position/[1-64] where [1-64] indicates the Ds100 channel number.

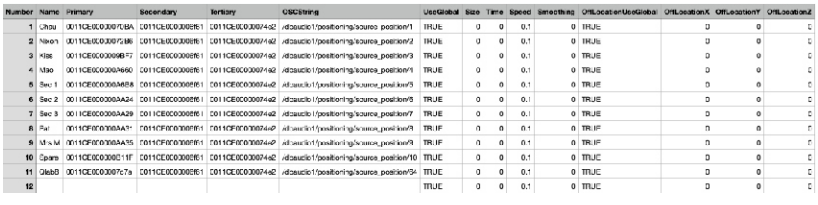
Each channel can be assigned specific Capture and Smoothing settings that are different to the global settings.

Each channel can be assigned a specific Off Location that is different to the global setting if required.

Tag mac addresses for Pri / Sec / Ter tags can be set in the inspector, manually entered, scanned or taken from the active tag pick list.



From the top menu bar, select File and Export to CSV



Tags and associated OSC strings can also be setup using the CSV Export / Import feature where setup workflow can be sped up using spreadsheet editing features.
First export to CSV, open the file in a spreadsheet program eg. Excel or Numbers, manipulate the data entries, save and convert to CSV and re-import to Tracker Translate.

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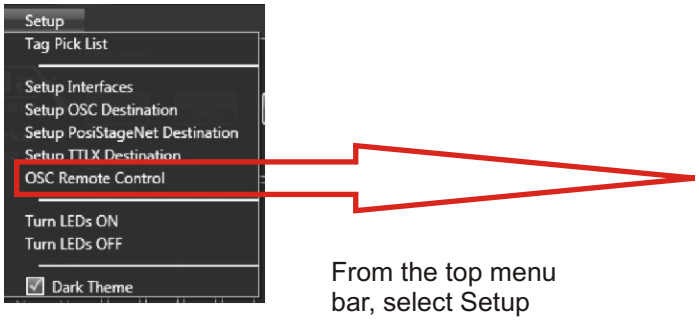
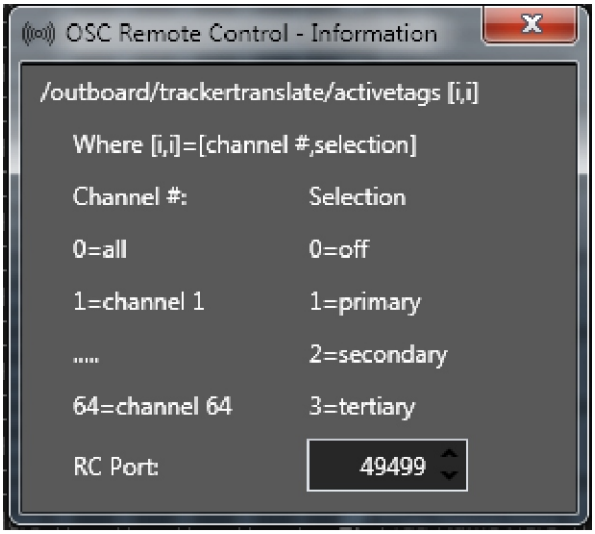
Remote control of Tracker Translate

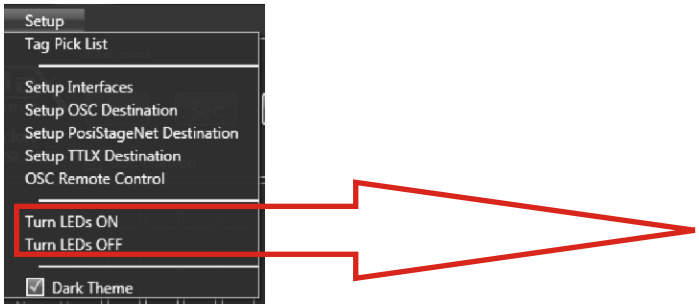


From the top menu bar, select Setup OSC Remote Control



Global or per tag switching between primary, secondary and tertiary tag selection can be remote controlled using OSC messaging to Tracker Translate.
OSC control messages are forwarded to the RC port set.
Messages should be in the general format /outboard/trackertranslate/activetags [i,i]
Where the first integer is the channel number to be controlled and the second integer sets the desired status.

Eg. /outboard/trackertranslate/activetags 0 1 will set all channels to primary tag active.



From the top menu bar, select Setup Turn LEDs ON/OFF

This command will turn on or off the sensor LEDs.
The command will run an executable that communicates with the tracking system to set the LED status.
In order to complete the command the sensors must be re-booted, this can be done from within Location Engine Configuration or by power the sensors off and on again.
The sensor LEDs will be illuminated during the boot up process and will extinguish once boot-up is complete, this allows for boot failure faults to be seen and identified.

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Guidance on Capture settings.

Try to think about the capture settings like this .... when the tag is moving it is being followed by a circle of radius [Size setting] that follows the tag at a maximum speed limited to [Speed setting] and if the circle does catch up with the tag and enclose it, either because the tag is moving slower than [Speed setting] or has stopped, the position capture will activate and freeze the current position after a holdoff time delay of [Time setting].

The position capture will release if the tag breaks out of the capture circle radius [Size setting].

The last setting for smoothing is a rolling average of the designated number of readings - a setting of 9 will result in a rolling average of the last 9 readings and will add some latency to the output data stream .. if the tags are running at 10 Hz then this will be around 1 second, at 50Hz the latency will be around 0.2 second.

Size sets the radius of the capture lock acquisition and breakout boundary 0=off 0.1m increments up to 5m
Typical setting 0.5 - 2m
Time sets the capture lock activation delay if the tag remains within the capture area.
Typical setting 1- 2 sec
Speed sets the speed at which the capture area tracks the tag.
Typical setting 0.1 - 0.5 m/s for tags on walking performers.

The Size setting should be greater than the jitter on the stationary tag - start with the size setting of 2m and slowly reduce it until jitter on a static tag is seen. Then increase the size to around double that value. This parameter may need further tuning during rehearsal to achieve the best performance for your application.

The Time setting is the length of time before the software will capture and freeze the tag position - if this is set too fast it could result in continued capture and release of the tags position while it is moving preventing smooth dynamic movement. If this is set too slow it will result in perceived jitter for longer than necessary once the tag becomes stationary.

The Speed setting should be set to a value less than the typical speed of the tag while it is in slowest typical motion, a setting of 1m/s (walking speed) may result in continued capture and release of the tags position while it is moving. I would suggest start with a setting of 0.1m/s and while the tag is in motion (very slow walking around the stage), slowly increase 0.5m/s until the dynamic movement becomes jerky because the position capture is grabbing the position too fast.

There is quite a degree of interaction between these 3 setting so it is worth experimenting with different settings during rehearsal to find the best result.

Tag position including uncertainty or jitter must be contained within the capture circle [Size] for longer than [Time] for positional capture lock to activate and freeze the tag position