



# User manual

## xp.group

**xp.group** is a m4l (max-for-live) device. It comes inside the *xp.devices* bundle under the file name *xp.group.amxd*.

It does not make any sound and does not send midi notes either. It is basically a set of osc controls which allows to modify the parameters of groups as they are managed by *XP standalone*

### What is a group ?

In XP, a group is an organized subset within a geometric hierarchy. By default, all the sources created belong to the group zero corresponding to the top hierarchical level. It is then possible to create child groups of this level in which the sources might be assigned. xp.group allows to modify the spatial properties of these groups, and therefore to interact on swarms of sound sources simultaneously.

XP allows the creation of 4 groups under the parent group (0) in which the sources can be assigned on the fly. It gives that option, but obviously a project can work without loading any of them. However, we believe it might become a very useful tool in the workflow.

### Initialization

The xp4l systems comes with a standard way to instanciate devices loaded in Ableton. It's dynamic, efficient and instinctive as long the basic rule is followed.

Drop the device on an empty Ableton track and the track title will take the name of <device-type><#id>.

Keep titles of the tracks the way they have been instanciated.

The first xp.group loaded will always be group0. It will give the ability to modify the entire sound scene property whether child groups have been created or not.

### Loading

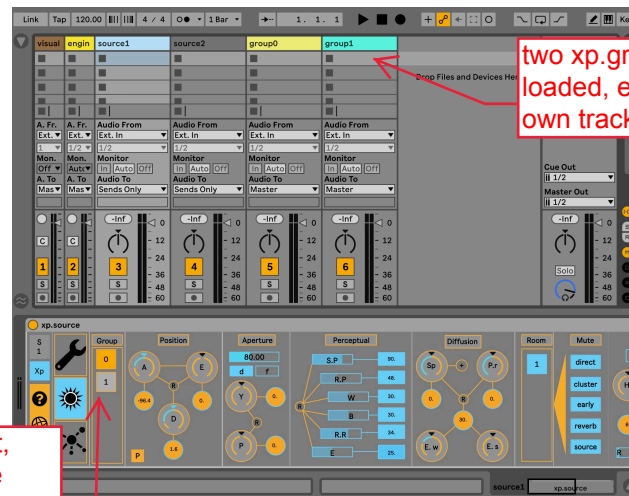
Load a xp.group on a new audio track. The title of that track automatically takes the available group number/ID among the 5 (0 to 4) available, according to those that have already been created in the project.

Use one xp.group per group to control its parameters, and load each instances on a different Live track.

Adding a second xp.group device, will entitle the second track 'Group1'. And so on. A maximum of 5 Live tracks shall be used for all of the maximum group number allowed.

## Assigning

After loading a *xp.group* into the project, which consists in creating a group in the system, its id appears in each of the *xp.source* group menu, in the perception panel. The source can then be assigned to this group. If the group is deleted, the source will be reassigned to *group0*, the default parent group of the hierarchy.



two *xp.group* have been loaded, each on them on their own track.

In each *xp.source* of the project, here in the source 1 device, the group menu is updated with available group. From there, each sources can be assigned to the desired group, or remain at the top level (0)

It is recommended to create at least the parent group (0), therefore load one *xp.group* on a live track, because even if other groups are not necessary in the project, this one will allow to transform the whole sound scene together, which could quickly become useful

## How it works

Each of the groups has the possibility of being transformed geometrically according to three mechanisms: translation, rotation, scaling, which will consequently modify the positions in space of the sources assigned to these groups.

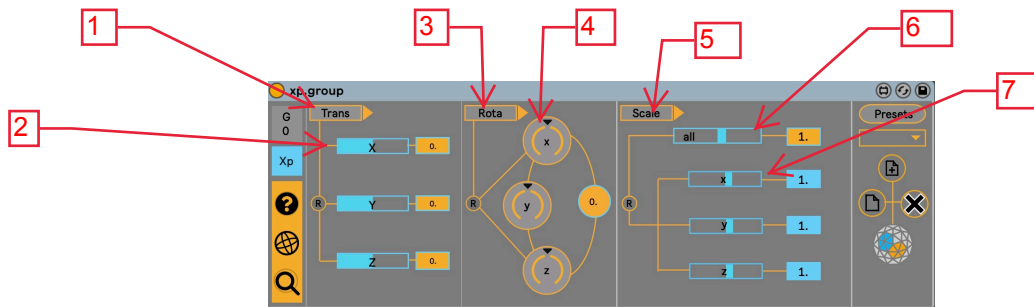
Translation : based on polar or cartesian coordinates. Move the group.

Rotation : Rotate the group around each axis

Scale : Scale each dimension of the group

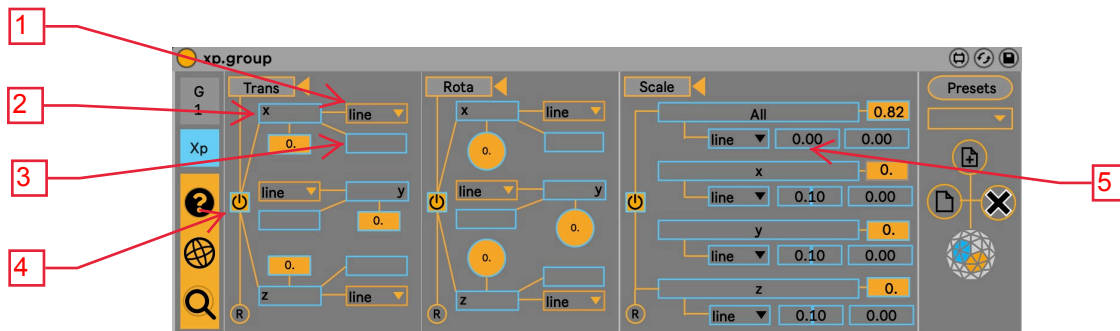
For each of these mechanisms, a generative engine allows to automatically transform parameters using procedural function. Once a generative function is chosen for one geometric dimension, it disables the "manual" mode. It's a real time engine.

## Parameters Reference : manual panel



- 1 : Translation button (manual / procedural)
- 2 : Translation of the group with xyz
- 3 : Rotation button (manual /procedural)
- 4 : Rotation of the group on each axis
- 5 : Scale button (manual /procedural)
- 6 : Scale of each dimensions at the same time
- 7 : Scale of x, y or z

## Parameters Reference : procedural panel



- 1 : function for the current animation (line, sine, tri, saw, perlin)
- 2 : Speed factor for the chosen function and dimension (x, y, z)
- 3 : Scale factor for the chosen function and dimension (x, y, z)
- 4 : enable procedural animation

Same parameters apply for "Rota" and "scale".

For scale, in addition :

- 5 : Offset for the chosen function and dimension (all, x, y, z)