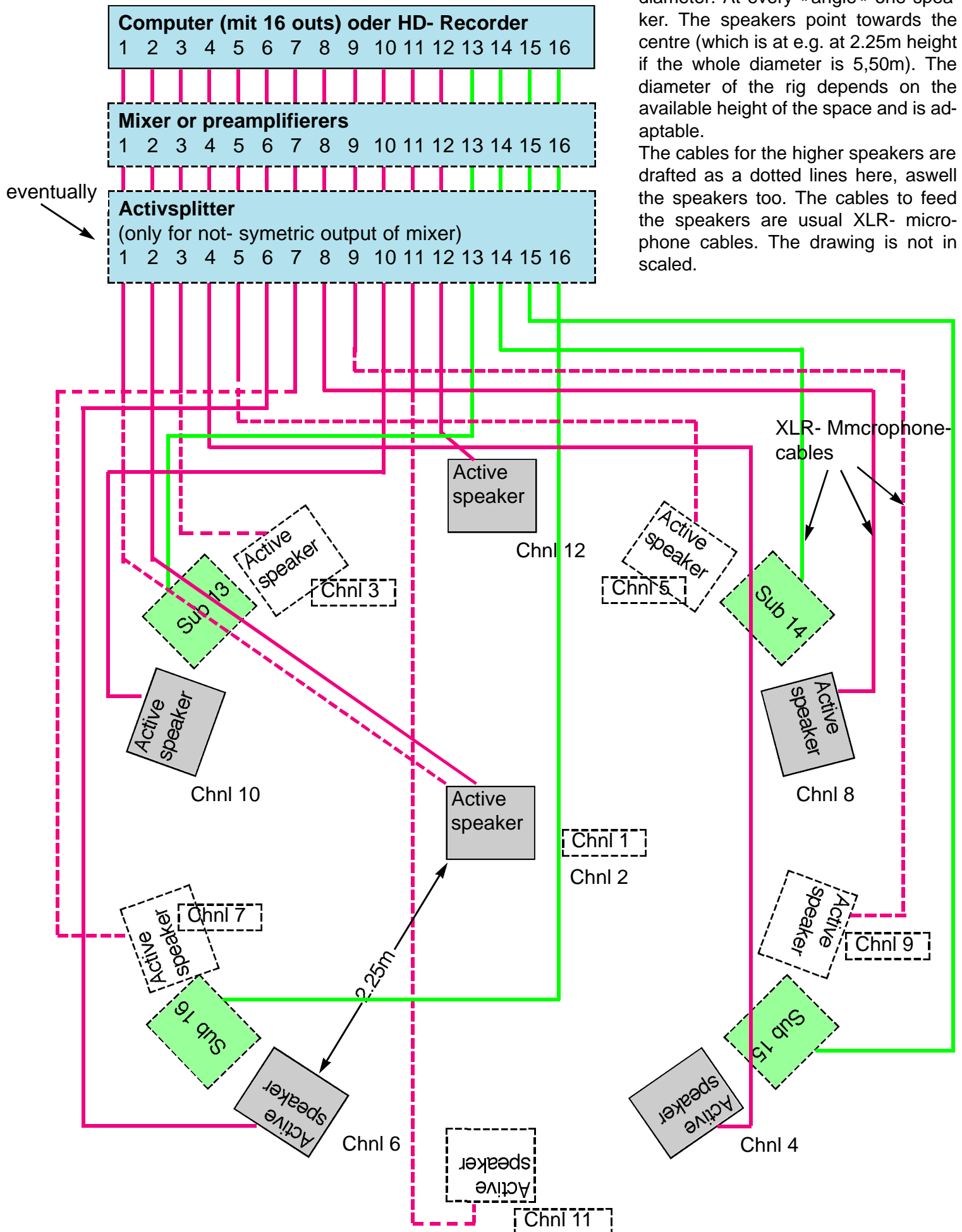


# Setup 12+4 chnl, HDR, active speaker + sub

The speakers (active speakers) are placed as a dodecahedron of x meters diameter: At every »angle« one speaker. The speakers point towards the centre (which is at e.g. at 2.25m height if the whole diameter is 5,50m). The diameter of the rig depends on the available height of the space and is adaptable. The cables for the higher speakers are drafted as a dotted lines here, aswell the speakers too. The cables to feed the speakers are usual XLR- microphone cables. The drawing is not in scaled.



## The precise positions of the speakers

The cartesian co-ordinates listed below describe the position of the speakers. The coordinates refer to the centre of the system ( $x,y,z = 0,0,0$  = centre of the listening- area). The first co-ordinate is for den relative distance of the speaker from this centre in x- direction, the second co-ordinate is for y- direction and the third stands for z- direction. According to the Ambisonics- Convention, the positive direction of x is in front of the listener, the positive y is left (!) of him, the positive z above. Negative x,y,z is accordingly behind, right and below the listener. The setup of an Ambisonics- rig is not related to a particular size : The relative x,y,z co-ordinates are to be multiplied with a factor related to the size of the room to get the absolute positions of the speakers. These positions should be kept at set-up as precise as possible. Furthermore it is necessary to make sure that the phase of the speaker is coherent at all channels, which is the case most of the times anyway though.

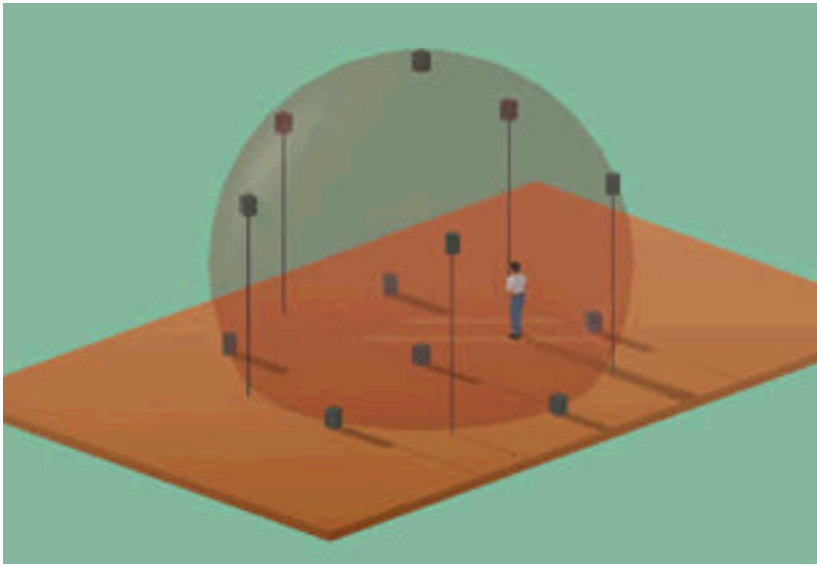
Hint: To get a larger listening area despite of limited height of the listening room, the channels 1 and/ or 2 (upper and lower speaker) may be placed a bit closer to the centre, so that the rig is distorted above and below a bit. The channels have to be delayed and attenuated a bit then (related to the reduced distance to the centre)

### Dodecaedron 1

speaker 1	<0.0000,0.0000,1.0000>
speaker 2	<0.0000,0.0000,-1.0000>
speaker 3	<0.7236,0.5257,0.4472>
speaker 4	<-0.7236,-0.5257,-0.4472>
speaker 5	<0.7236,-0.5257,0.4472>
speaker 6	<-0.7236,0.5257,-0.4472>
speaker 7	<-0.2764,0.8507,0.4472>
speaker 8	<0.2764,-0.8507,-0.4472>
speaker 9	<-0.2764,-0.8507,0.4472>
speaker 10	<0.2764,0.8507,-0.4472>
speaker 11	<-0.8944,0.0000,0.4472>
speaker 12	<0.8944,0.0000,-0.4472>

### Subwoofer

Speaker 13	<0.7071,0.7071,0.0000>	left front
Speaker 14	<0.7071,-0.7071,0.0000>	right front
Speaker 15	<-0.7071,-0.7071,0.0000>	right back
Speaker 16	<-0.7071,0.7071,0.0000>	left back



**Dodecaedron 1**  
**(without Subwoofer, with reduced distance of chnl 2**  
**to the centre)**