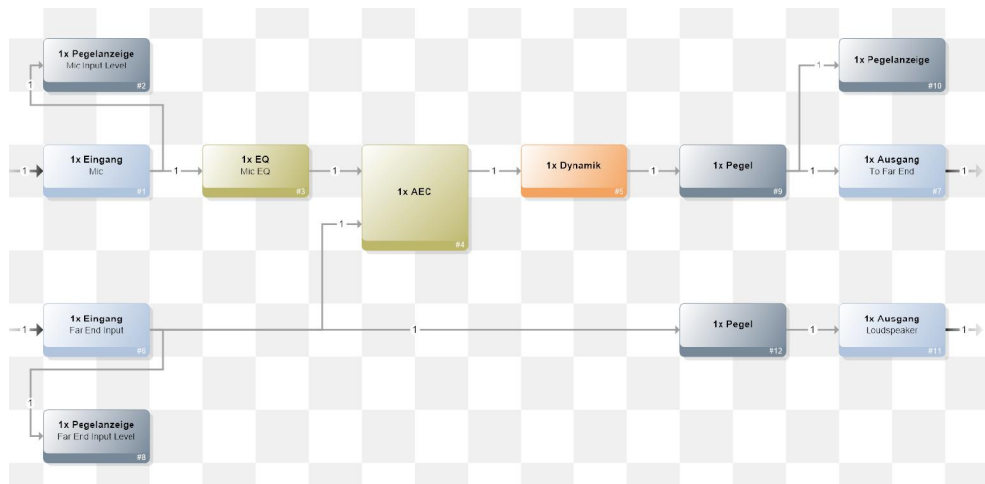


# HARVEY®

## Quick Start

### AEC



HARVEY Composer 3.0

DSPECIALISTS  
Digitale Audio- und Messsysteme GmbH  
Helmholtzstr. 2-9 L  
D-10587 Berlin

[www.harvey.audio](http://www.harvey.audio)

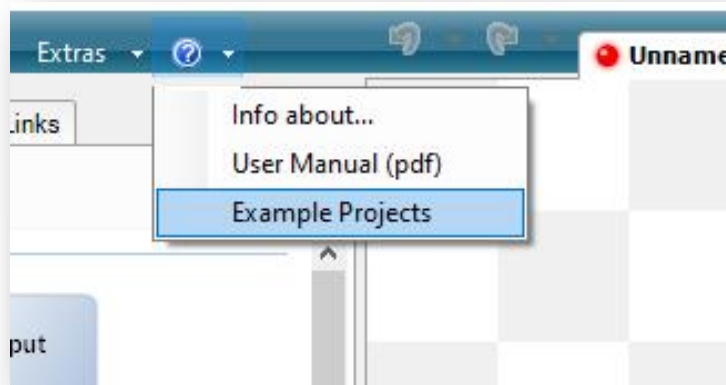
# Content

<b>1</b>	<b>Example Projects</b>	<b>3</b>
1.1	The different projects	3
1.2	Example 1: Harvey with a microphone	4
1.3	Example 2: Harvey with 2 microphones	5
1.4	Example 3: Harvey with 2 microphones and Auto-Mixer	6
1.5	Example 4: Hypermatrix project with 2 Harveys	7

# 1 Example Projects

In this document individual AEC sample projects are shown. With the help of these projects the Harvey AEC can be used with a few adjustments.

The example projects shown here are delivered with HARVEY Composer. You can find these projects under the menu item "Example projects":



A folder with sample projects opens. The projects shown in the document are located in the "AEC" subfolder.

## 1.1 The different projects

A total of 6 AEC projects are delivered:

<b>Datei</b>	<b># Rooms*</b>	<b># Mics**</b>	<b>Automixer</b>
<i>HARVEY_Example_AEC_01_Single_Mic.hvy</i>	1	1	No
<i>HARVEY_Example_AEC_02_2_Mics.hvy</i>	1	2	No
<i>HARVEY_Example_AEC_03_2_Mics_Automixer.hvy</i>	1	2	Yes
<i>HARVEY_Example_AEC_04_Hypermatrix_two_single_Mic.hvy</i>	2*	1	No
<i>HARVEY_Example_AEC_05_Hypermatrix_Multi_Mic.hvy</i>	2*	2	No
<i>HARVEY_Example_AEC_06_Hypermatrix_Multi_Mic_Automixer.hvy</i>	2*	2	Yes

\* Several rooms are implemented as a HARVEY hypermatrix, with one HARVEY Pro and one AEC per room.

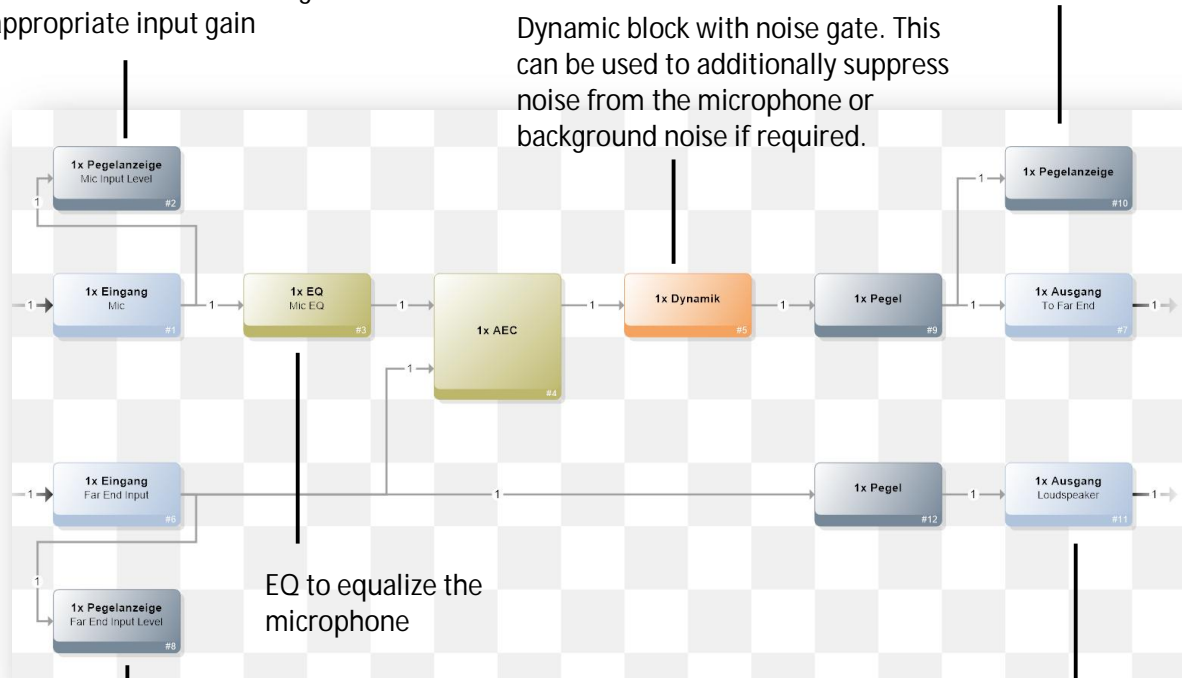
\*\* # Mics designates the number of microphones per room/AEC.

## 1.2 Example 1: Harvey with a microphone

### Overview of the project:

Analog input for the local microphone, with level meter for setting the appropriate input gain

Output signal sent to the opposite site / Far End

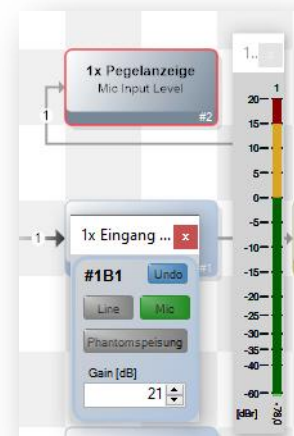


Input signal coming from the opposite side, with level display

Loudspeaker output, this is used to reproduce the opposite side / far end in the local room

### Adjustments to the project

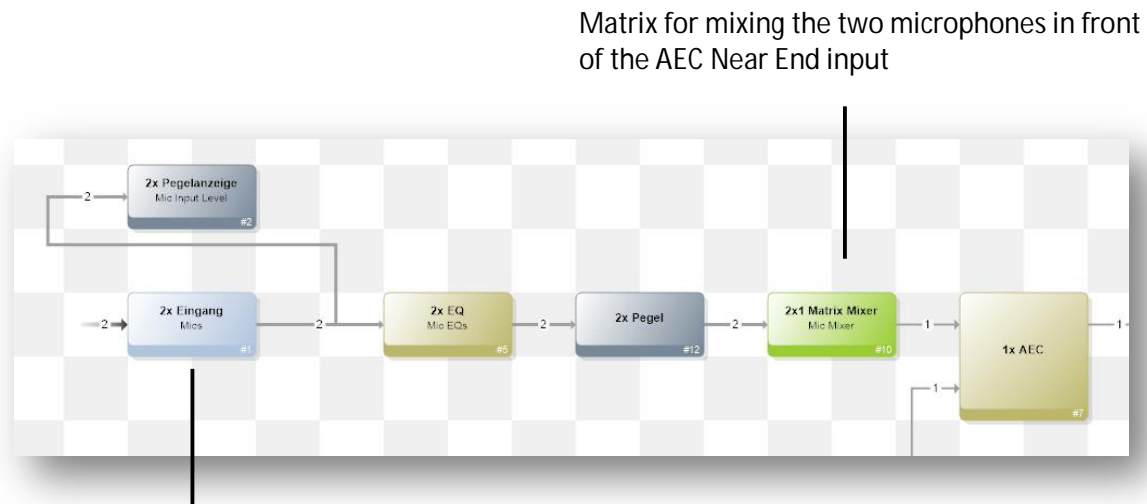
- Connect the analog inputs and outputs on the Harvey, if necessary, e.g. the inputs and outputs can be replaced by Dante Inputs / Outputs.
- Set microphone level: The local microphone input should be around 0 dBr when speech is present:
- Adjust the input level of the Far End input accordingly. Here, too, the level display should show around 0 dBr when the signal is present.
- If the two levels are around 0 dBr, no further setting is required for the AEC.
- With the dynamic block, an additional noise gate can be used to suppress noise, e.g. from the microphone. Slight compression before the output also helps to send smoother output signals to the opposite side.



*Adjusting the input using the level meter*

### 1.3 Example 2: Harvey with 2 microphones

In principle, the project is the same as the project from example 1. However, instead of one microphone, a total of 2 microphones are used. The following figure shows the modified part of the project:



2 microphone inputs, each with level meter and EQ for equalization

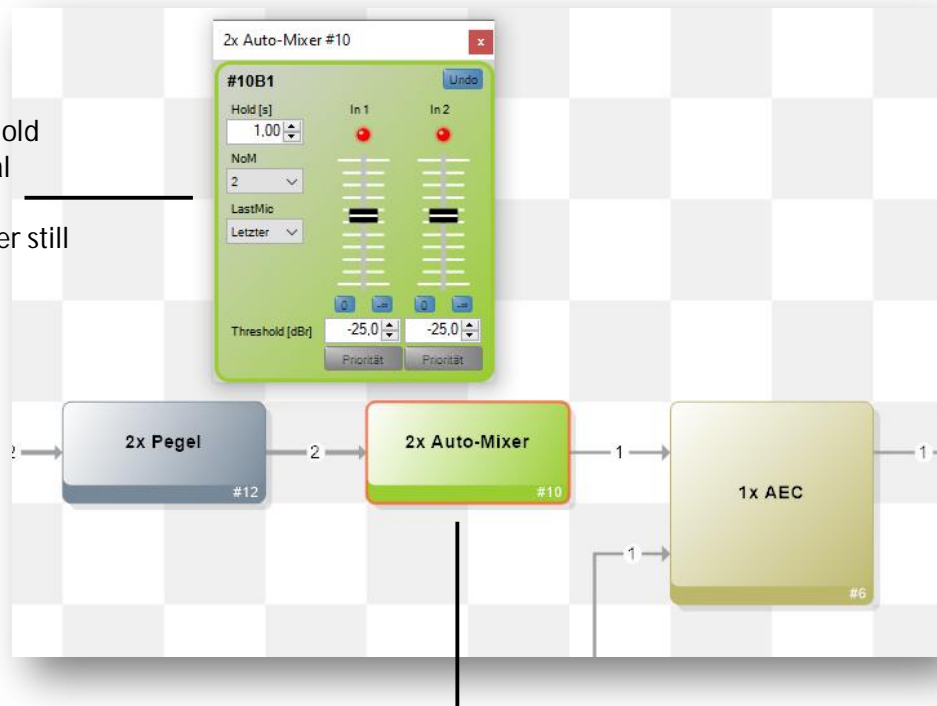
**Note:** More than 2 microphones can also be used. The following must be observed:

- The room should be acoustically optimized, i.e. have as little reverberation as possible and ideally no room modes.
- The microphones should be equalized in connection with the room, so that unwanted resonances are already prevented here.
- The microphones should be positioned appropriately so that the distance between the speaker and the microphone is as small as possible and the microphones pick up little echo.

## 1.4 Example 3: Harvey with 2 microphones and Auto-Mixer

Instead of the matrix block from example 2, an Auto-Mixer can be used:

Set the auto mixer so that the hold time is not too short and several microphones can be open. The thresholds of the Auto-Mixer still have to be adjusted to the microphones.



The Matrix Mixer from the previous example block was replaced by an Auto-Mixer

The advantage of the Auto-Mixer over a Matrix Block is a potentially lower background noise level, since not all microphones can always be heard. Again, it is possible to use more than 2 microphones, but the notes from the previous example should be followed.

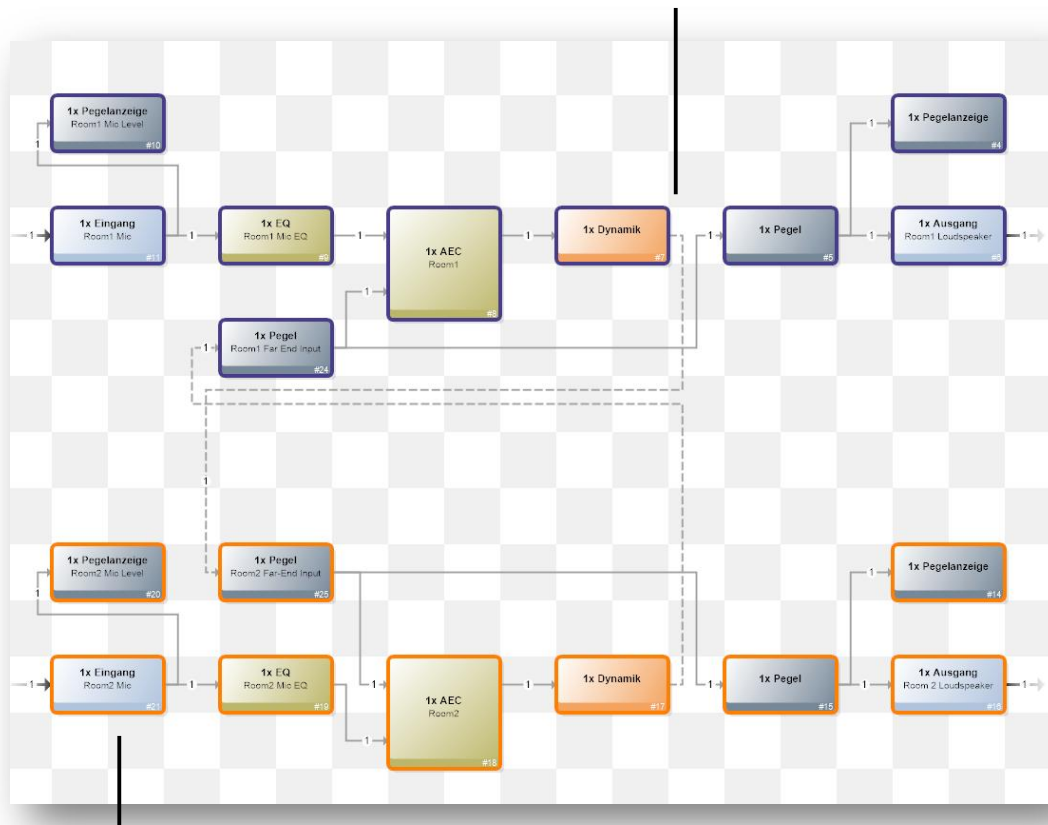
## 1.5 Example 4: Hypermatrix project with 2 Harveys

The Hypermatrix example projects show in each case how 2 Harveys can be connected with AEC, e.g. in order to represent two rooms. Three examples show the cases:

- 1 microphone input and 2 microphone inputs,
- one with matrix mixer and
- one with auto mixer.

The following is an example of the project with one microphone:

Instead of an analog Far End output, the output of the AEC is transmitted directly to the Far End input of the other Harvey with a hyperlink (via Dante, dashed in Composer).



The two Harveys, in blue and orange, each have a microphone and speaker connected. The Far End inputs and outputs are realized as hyper-connections (via Dante, dashed in Composer).