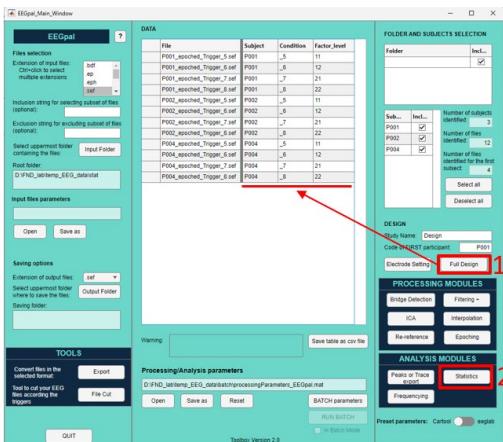


# EEGpal: Study design (Full Design)

Version 2.01, 20.11.2025

Video tutorial: <https://youtu.be/W8wzVinryh0>

The Full Model tool is used to specify a factorial design for your data. It will then be used to perform statistical analyses in the the **Statistics module**. It will automatically fills in the *Subject*, *Condition* and *Factor\_level* columns of the Data table on the main screen. This is a necessary step before entering the Statistics module.



## How to use the Study design interface:

The screenshot shows the 'STUDY DESIGN' dialog box. It has fields for 'Study Name' (Design), 'Code of FIRST participant' (P001), 'Number of conditions' (4), and 'Number of factors' (2). Below these are five steps: Step 1 (specifying conditions and factors), Step 2 (entering condition names from filenames), Step 3 (specifying factor levels), Step 4 (renaming factors), and Step 5 (specifying between/within subject factors). To the right is a table with two rows: 'Conditions' (5, 6) and 'level\_Synch' (1, 2, 1, 2, 1, 2). Below this is another table with two rows: 'Factors' (Synch, Sound) and 'Between' (8, ). A red arrow points from the 'Conditions' table to the 'Factors' table.

1. Specify a name for your Design.
2. In order to perform the statistics correctly, EEGpal needs to know which participant is associated with each file. Please enter the code for the first participant. This code must be included in the name of the EEG files. This option is the same as the '*Code of first participant*' option in the EEGpal main window.

**Warning: the participant code must be the same length and in the same position in the file name for each participant. Name your file accordingly.**

3. Specify the number of conditions in your design. For this example, we are running a 2x2 ANOVA, meaning that we have four different conditions.
4. Specify the number of factors in your design. For this example, we are running a two-by-two ANOVA, meaning that we have two different factors.
5. Enter the name of the condition. However, it should not be an arbitrary name. It should be a substring present in the EEG file name, enabling EEGpal to associate the files with the corresponding factor (similar to the participant code mentioned in point 2). In this example, the condition identifier code is '\_5' in the file 'P001\_epoched\_Trigger\_5.ep'.
6. Specify the factor level associated with each condition. Enter a number in each cell of the table. The combination of factor levels for each condition must be unique. In this example, the 'Level Synch' column refers to 1 = synchronous conditions and 2 = asynchronous conditions, while the 'Level Sound' column refers to 1 = sound play and 2 = sound omission.
7. In the first column of the 'Factors' table, you can enter the names of your factors. This step is optional. Otherwise, the default names will be 'Factor1', 'Factor2', and so on.
8. It is now time to specify whether your factors are within-subject (i.e. the same participants performed all the conditions associated with each level of the factor) or between-subject (i.e. different participants performed the conditions associated with each level of the factor). In this example, the 'Sound' factor is unchecked, meaning it is a within-subject factor, and the 'Synch' factor is checked, meaning it is a between-subject factor.
9. Press on **Save** when you have finished.

## FAQ

### What the output looks like?

| Subject | Condition | Factor_level |
|---------|-----------|--------------|
| P001    | _5        | 11           |
| P001    | _6        | 12           |
| P001    | _7        | 21           |
| P001    | _8        | 22           |
| P002    | _5        | 11           |
| P002    | _6        | 12           |
| P002    | _7        | 21           |
| P002    | _8        | 22           |
| P004    | _5        | 11           |
| P004    | _6        | 12           |
| P004    | _7        | 21           |
| P004    | _8        | 22           |

These three columns of the Data table in the EEGpal Main Window are automatically filled by the module. This is necessary to use the **Statistics module**.