

Master Compensation

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Master Compensation

The idea behind Master Compensation function is to enable different test stations to handle same setups and reference limits. If two test stations including test fixture and test camber are equal you find out that it is very difficult to make same measurements with same setups on each system. If the differences are too big you normally make sage setup parameters but with a separate reference limits on each test system.

If the deviations between two test stations are small the changes can be out compensated by using a Master Compensation function. On this way a test system using System 1 & System 2 be as one system. On the same way two test stations placed on different locations are compared.

Another benefit of this function is that a test station can be compared day one and later to see the difference over time with the reference speaker used day one. If there is difference day one and later the changes con come from your test system or from the reference speaker itself, however you can see the difference.

The Master Curve function consists of two Master Curves. First a Master Curve must be generated with your reference unit and stores as a Master Curve. Later a Master Compensation Curve must be generated where the changes are stored. When the Master Compensation curve is present a Master Compensation can be called and the variations will then be out compensated.

Another option is to use your golden reference unit and save this as a Master. Then use a speaker unit of same type as the golden reference unit and use this unit as a golden unit due to variations of the frequency response will be out compensated by using the Master Compensation function.

The Master Compensation function out compensate the frequency response in Channel A. If same input is used for Channel B and Channel D the changes are done here too.

How to make Master Curve

Following steps are made in the Setup Mode.

Step 1

Make a setup for the speaker you want to test. Use your reference unit.

Go to reference menu and make a measurement.

Make the upper and lower test limits for your test channels except” Channel A”.

Reset the “Channel A” limits is present and includes measured data to upper and lower limits.

Now data upper and lower limits displayed at same level.
See figure 1.
Save the setup as reference.

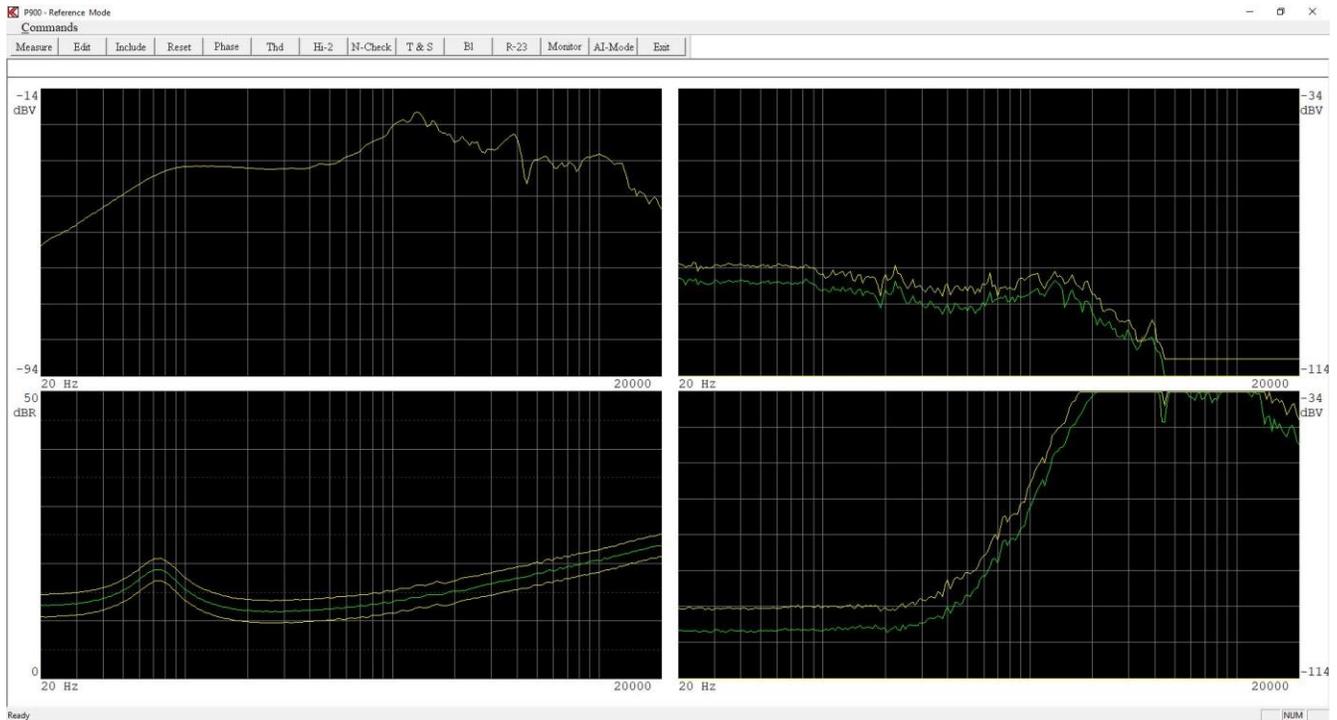


Figure 1: A setup of a speaker with a reference unit.

Channel B, C and D upper and lower limits done. Channel A upper, lower and data at same level.

Step 2

Load the setup just created.

Be sure the upper limit in "Channel A" is as the frequency curve.

When saving as compensation curve the upper limit in channel A will be stored as a compensation curve.

Save the setup as Master Curve. Note the Channel A upper limit curve is used to generate the Master Curve.

Now a Master Curve is generated.

Step 3

Re-Load the setup just created.

Now in setup the text “Master Present” is displayed in the status field. See figure 2.

If you not want to use this Master Curve the curve can be deleted under delete curve & exit.

- a) Now you can use a replacement of you golden unit and make a Master Compensation curve.
- b) Or if you want to use to out compensate using same PC but test station 2, rename your setup to use for station 2 and then use the setup and make a Master Compensation to use for test station 2.
- c) Or if you want to compare two test stations using another PC on another location copy setup and install the setup on the new location.

The most important that your setup have the “Master Present” you just generated.

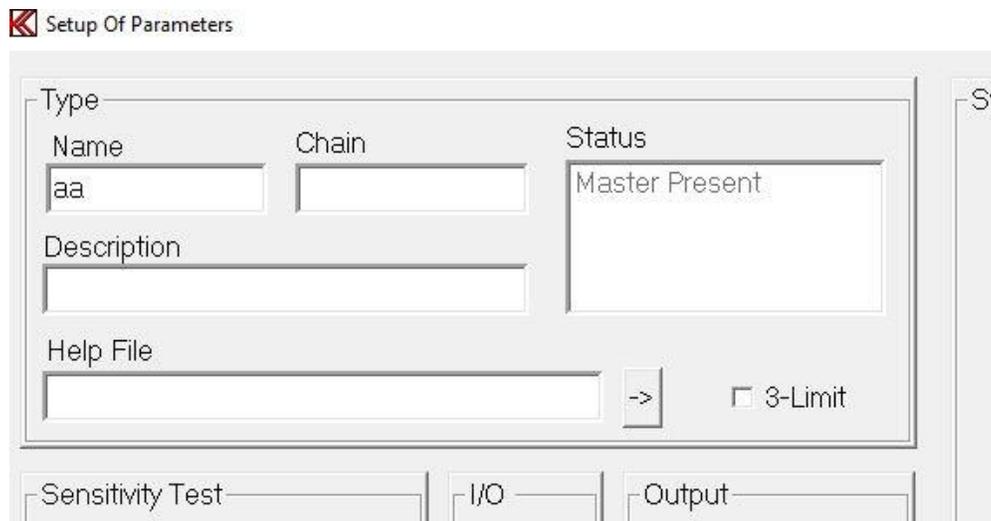


Figure 2: Status show a Master Curve is present.

Step 4

If solution a) is selected mount your new speaker unit.

If solution b) is selected mount your golden reference unit on your test station 2 and load your setup you just have renamed.

If solution c) is selected mount your golden reference unit on your test new station and load your setup you copied.

Make a measurement with the unit you selected on a), b) or c) solution.

Figure 3 show a measurement (solution b) was used.

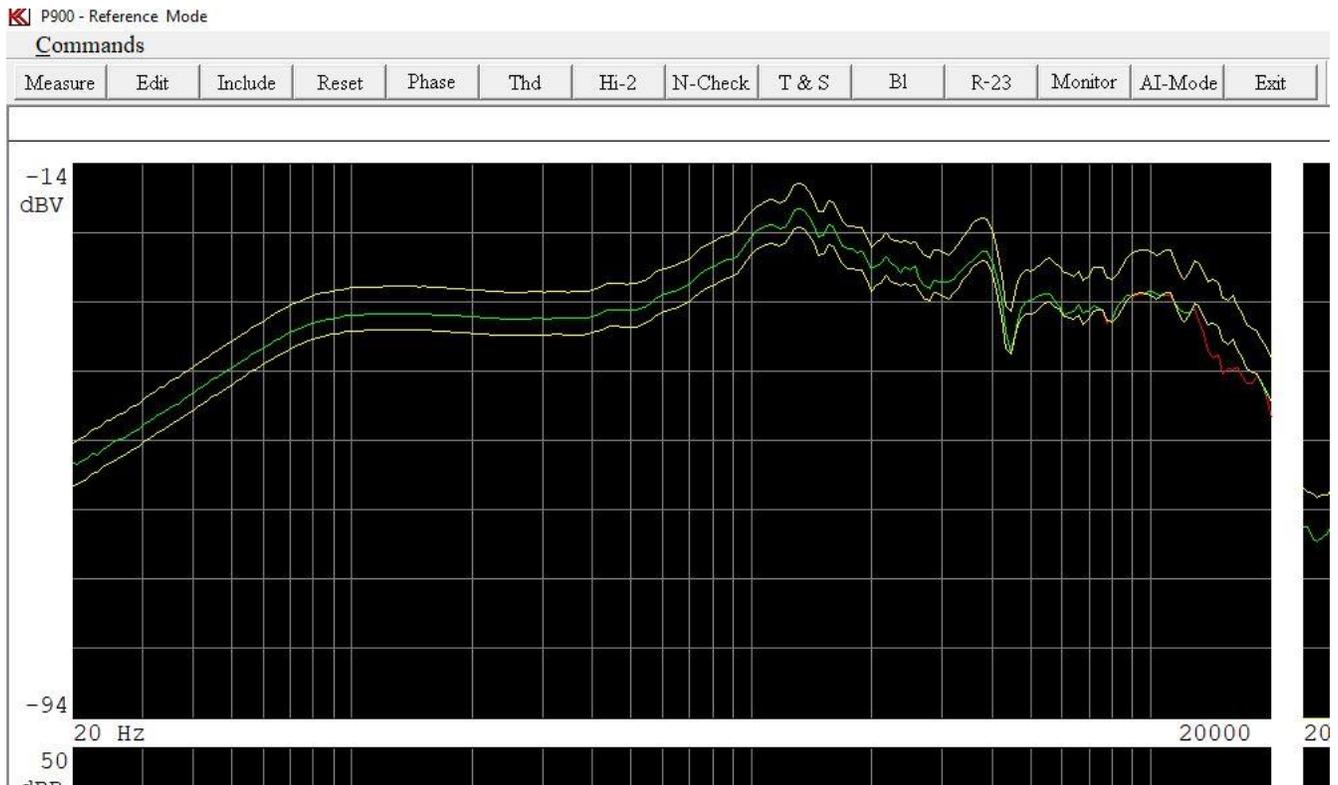


Figure 3: A measurement used on system 2 with the golden reference unit (solution b)

The Master Compensate curve is not displayed due. Many different curves can be displayed in Channel A. To reduce the number of curves the Master Curve and Master Compensate Curves is not displayed here. If you want to see the Master Curve enter Edit Mode. Open the Display and use the Select Display. Now unclick the Ch A hide. See figure 4.

Now the Master Curve is displayed as a white curve. See figure 5.

Step 5

Go to Reference Mode and on the “Commands” use the “Make M-Comp” (Make Master Compensate curve) function. This generates the difference between the measurement and the master curve.

To see the Master Compensation Curve just generated. Enter Edit Mode. On figure 6 the cyan curve is

the Master Compensation curve and shows the difference between the Master Curve and the measurement in the system 2.

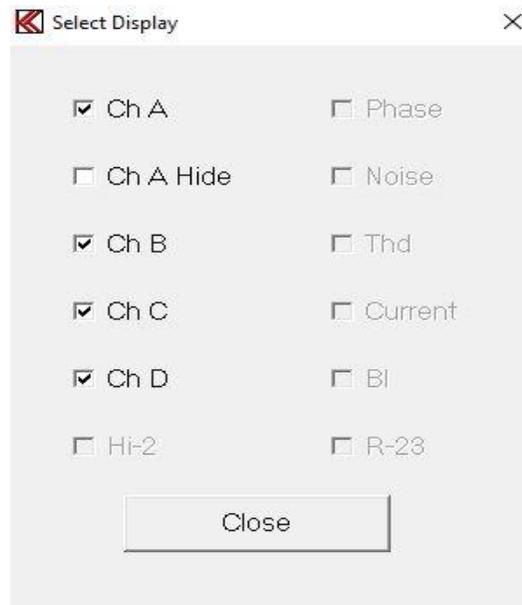


Figure 4: The “Ch A Hide” unclicked.

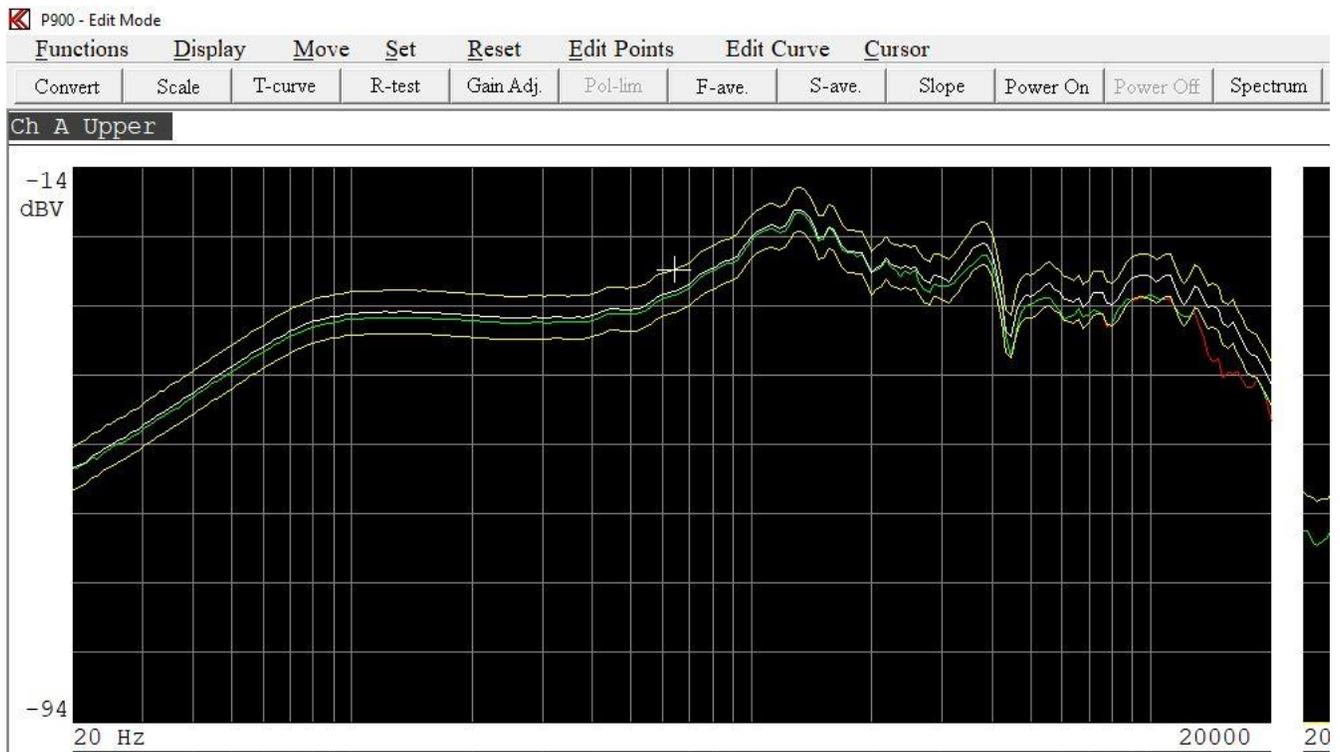


Figure 5: Master Curve displayed as a white curve after Ch A unclicked

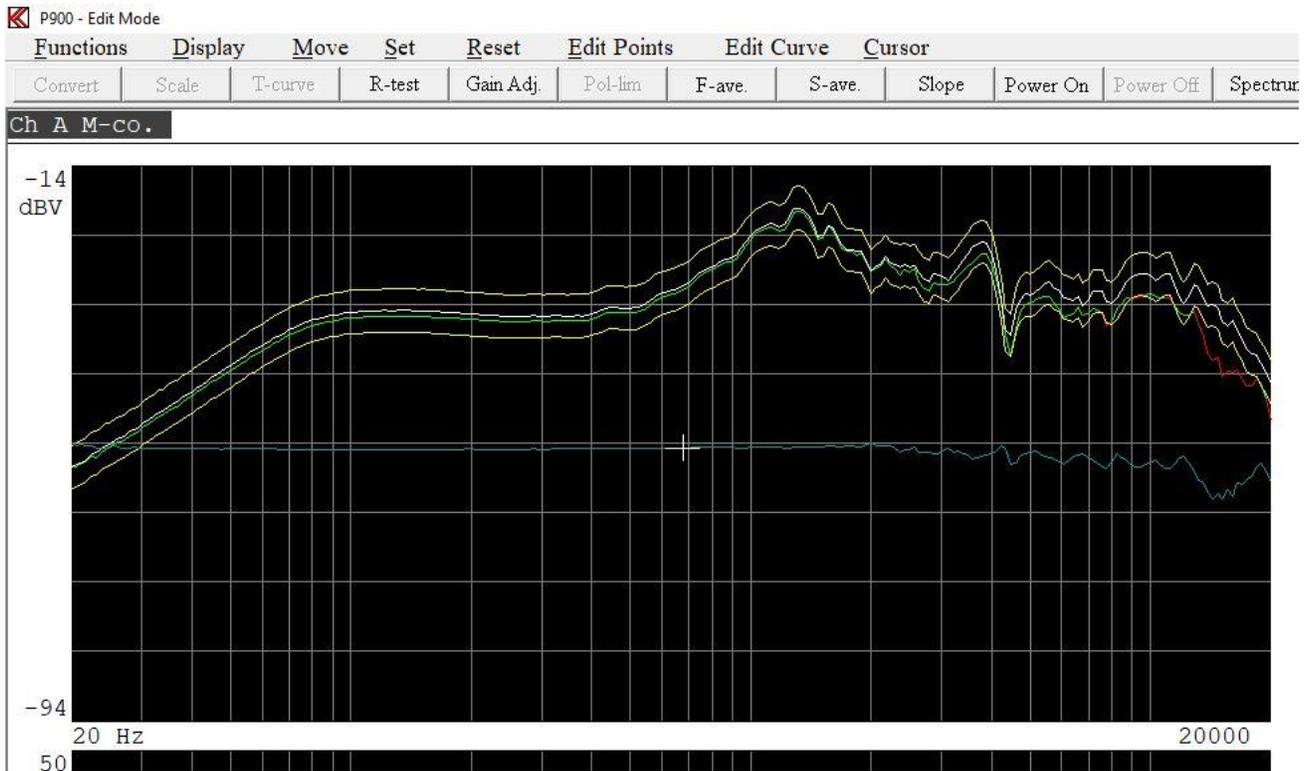


Figure 6: Cursor on the Master Compensation cyan curve.

Step 6

When the master compensation curve is present a Master Compensation can be done.

Go to Reference Mode and on the “Commands” use the “Master Comp” (Master Compensate) function. Figure 7 show the measurement as in figure 5 but after the Master Compensate function.

Save the setup as reference curve.

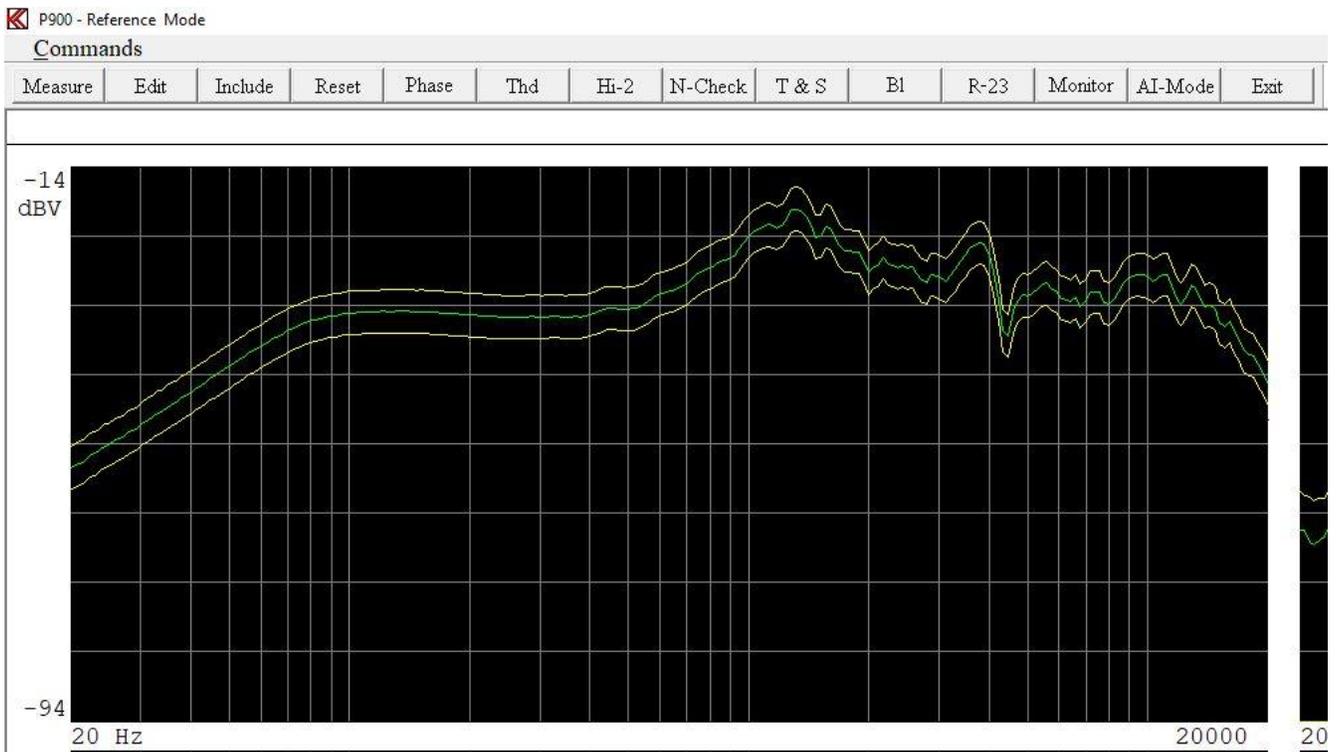


Figure 7: Measurement after a Master Compensate

Run Mode

In Run Mode the Master Compensation will do the compensation automatic when the Master and Master Compensation curve are present. The operator normally cannot see that the compensation is done. If the operator wants to see the Master and Master Compensation curves you have to enter Cursor function. Here the operator has to select the Display and unclick ChA Hide flag. Then the operator can see both the Master and Master Compensation curves. See figure 8.

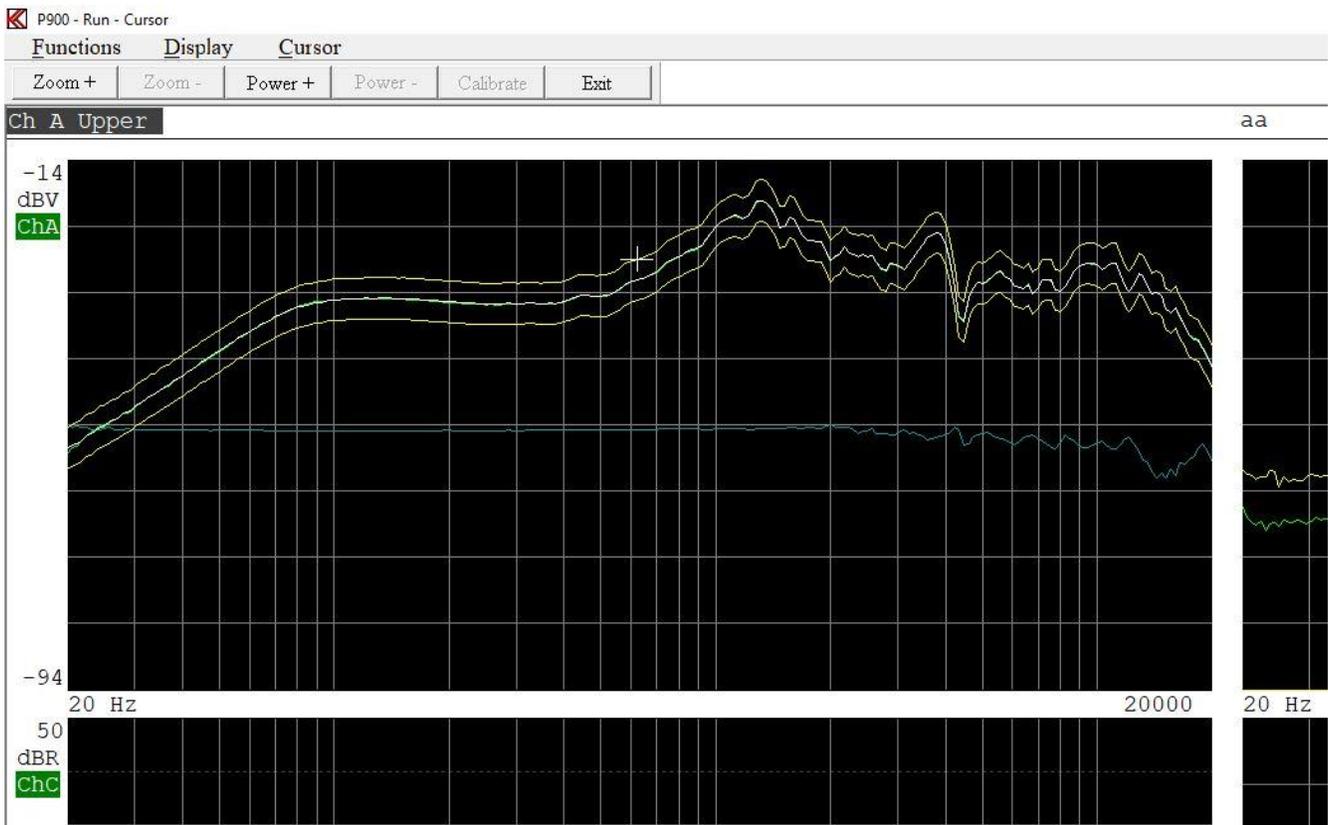


Figure 8: Display Master and Master Compensation curves in Run Mode.