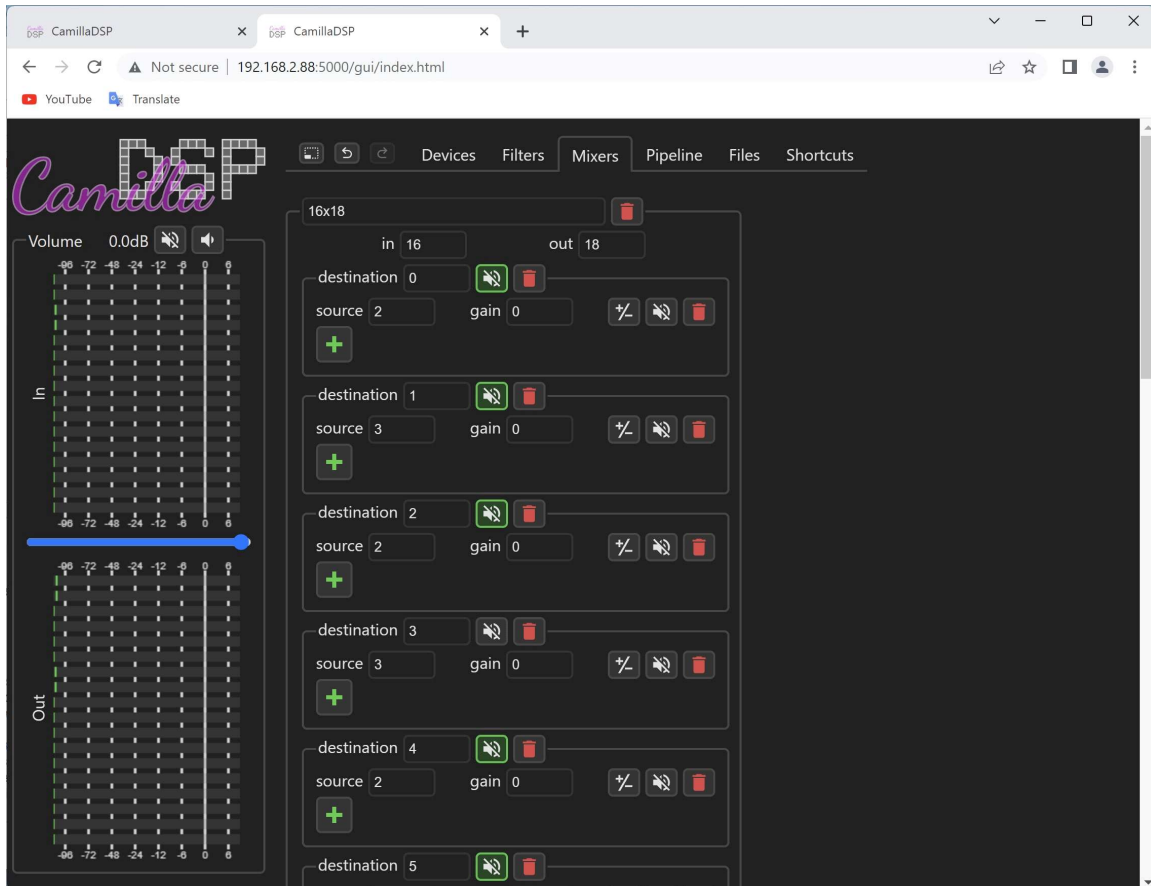


## 1. Measure drivers using REW.

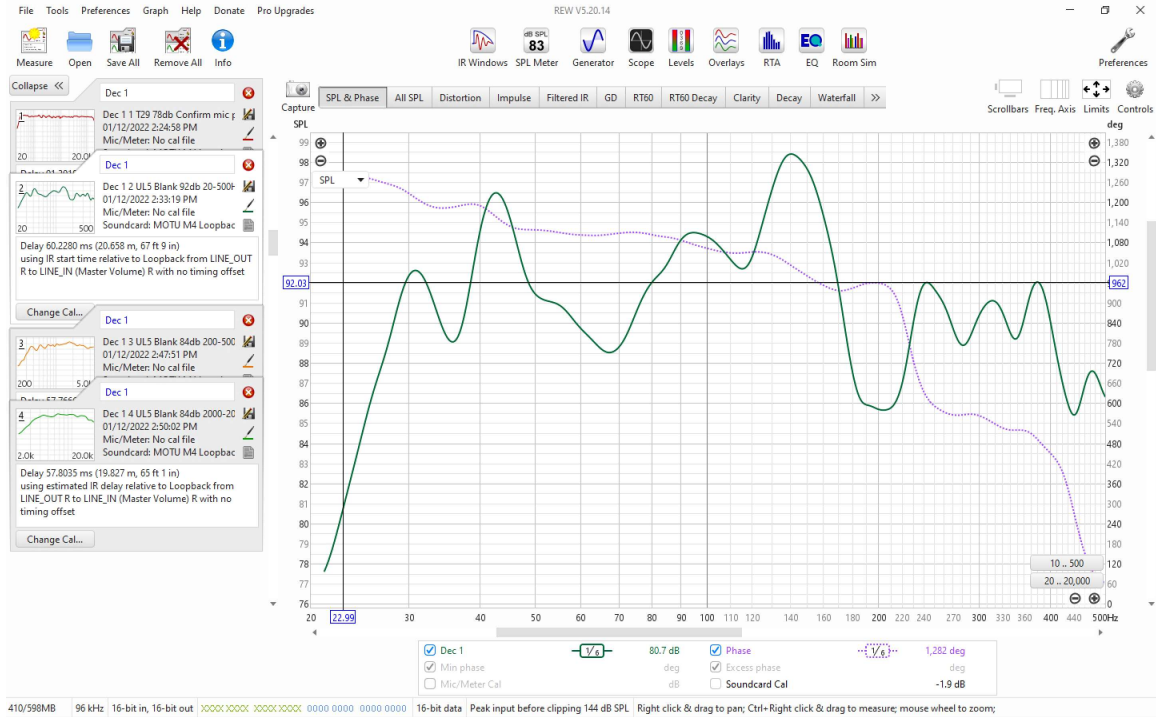
In REW Preferences, Analysis - I untick Decimate IR and in Preferences, Equaliser - I set default equaliser to CamillaDSP.

In CamillaDSP I load a config with no filters and in the Mixer I mute all outputs except the one I am measuring.



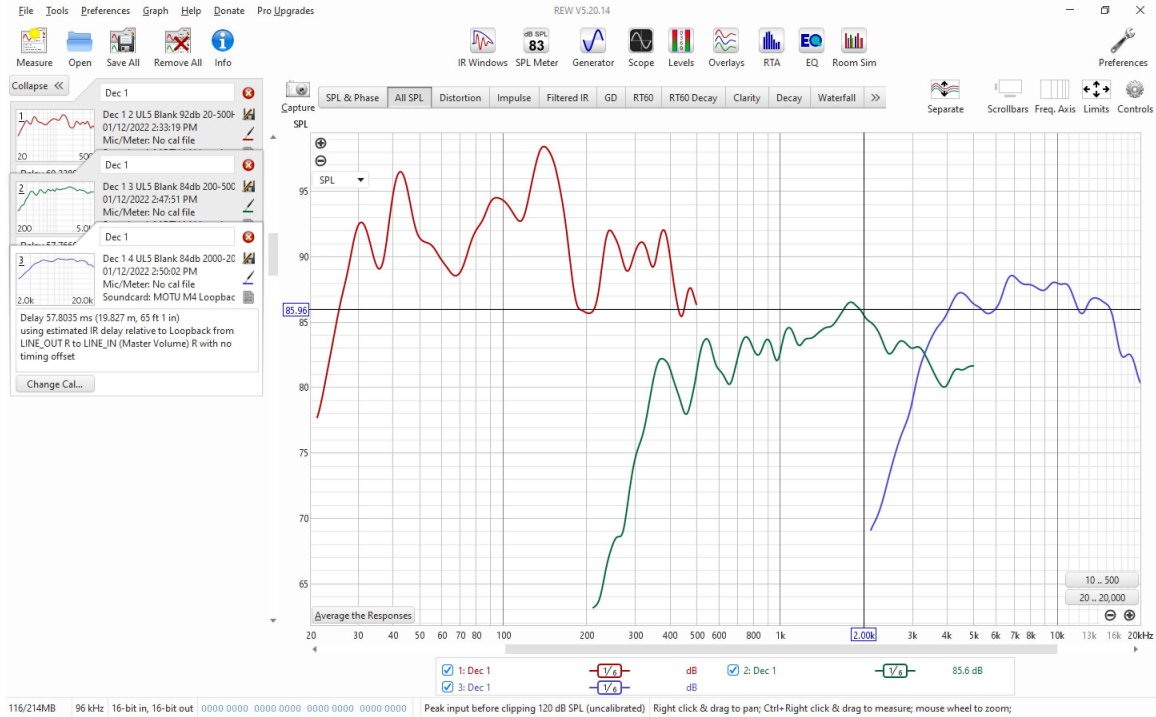
CamillaDSP showing muted channels with one open for measuring.jpg

\*\*\*\*\* Screenshot of Bass bin measurement.



## Dec 1 2 UL5 Blank Bass 20-500Hz 92db.jpg

This procedure is repeated for the mid and hi, altering the frequency sweep to 200-5,000 Hz for mid and 2,000 to 20,000 Hz for hi and unmuting the appropriate "destination" channel in the Mixer. In my setup with the Motu Ultralight Mk5, bass is destination 2 & 3, mid 4 & 5 and hi 6 & 7, even numbers are the Left channel, odd numbers are the Right channel. After changing the unmuted destination, don't forget to "Apply to DSP".

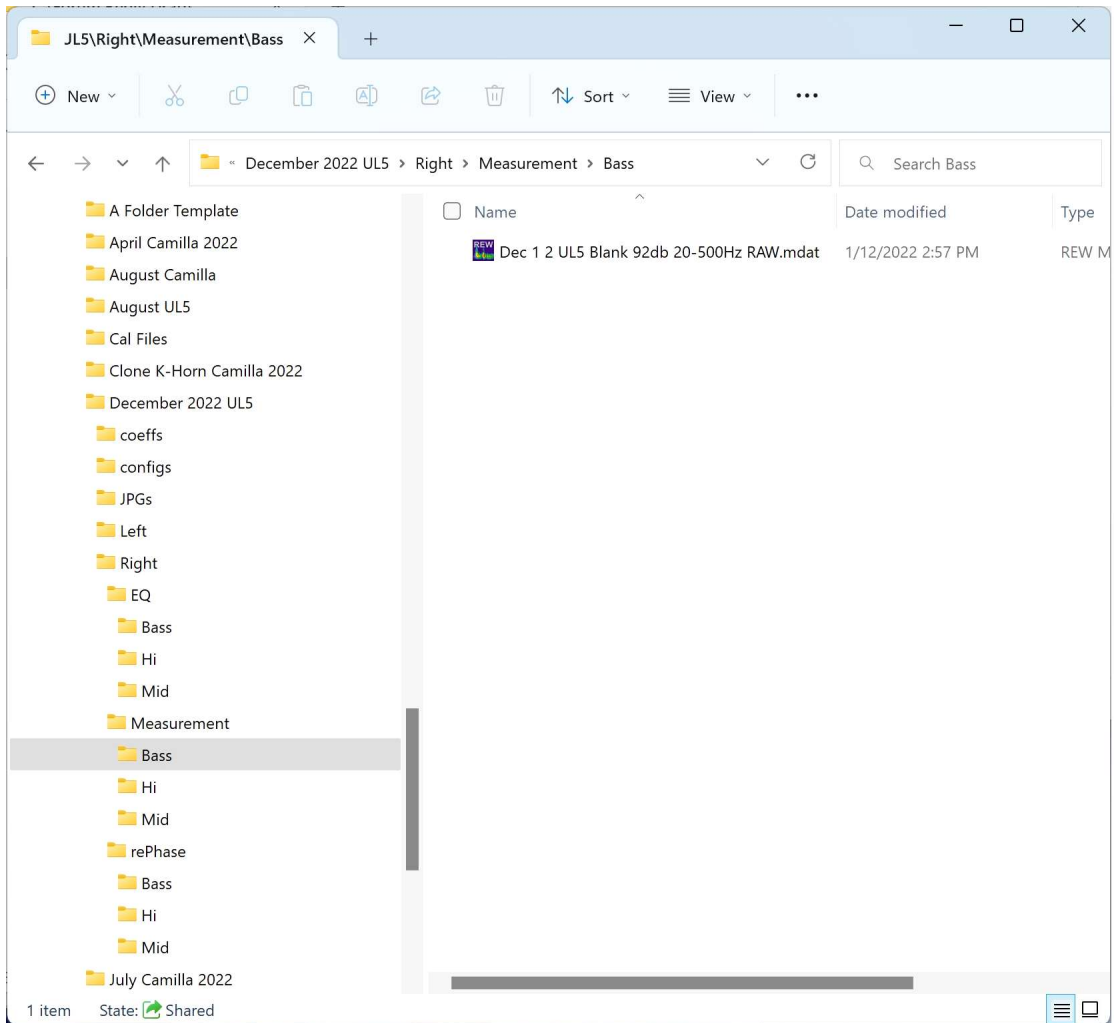


This graph shows the three drivers raw measurement at the same volume setting. The SPL difference is due to Bass being an 8ohm and mid & hi 16ohm and on a different amplifier to the bass. Easy to flatten in a DSP, good luck in a passive XO.

### A note about naming REW files.

First off, there will be a lot of measurement files. The file name for the Bass measurement above is Dec 1 2 UL5 Blank 92db 20-500Hz RAW.mdat, a descriptor (rather than just an identifier) containing the measurement session date, measurement number in the session, CamillaDSP config identifier and measurement settings.

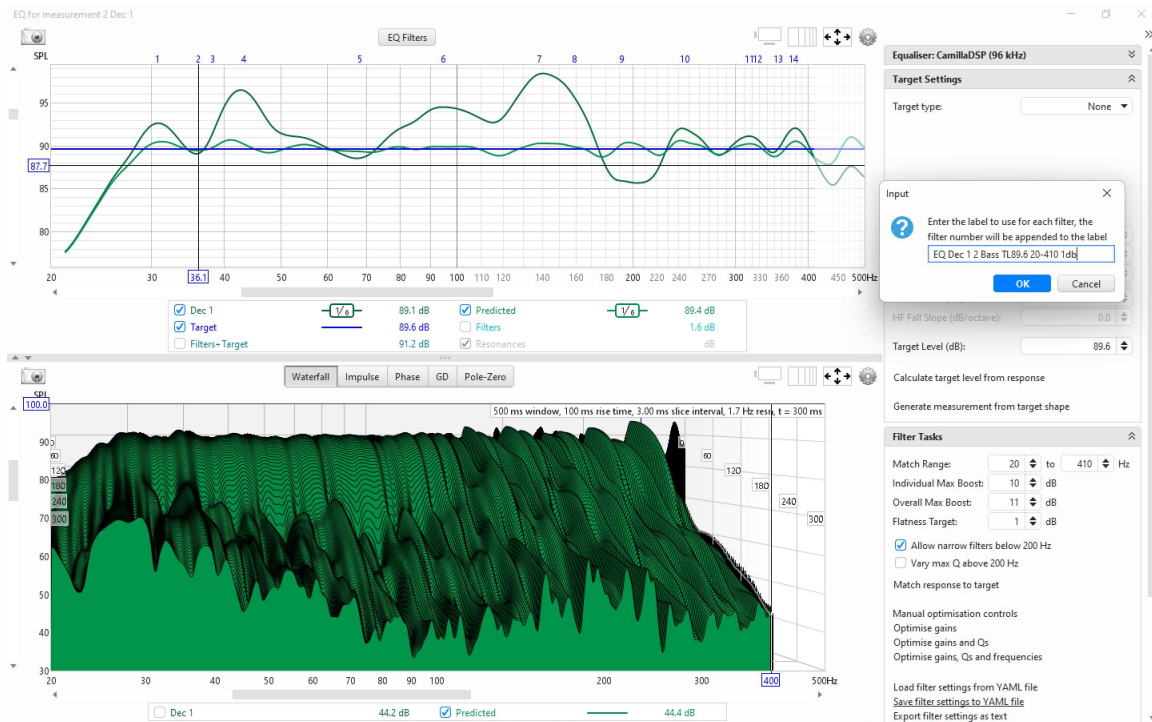
I have a folder called REW Measurements where I keep measurements etc filed and retrieveable.



### Calculate EQ and save EQ filters.

This screengrab shows the REW EQ screen with filters calculated for the Bass measurement and the dialog popup where you can set the filter name. Again, the label is a descriptor showing the Bass measurement label and the filter task settings (Target Level, frequency spread and Flatness target) so that in later testing I can see what I was trying to do.

\*\*\*\*\* Screengrab of REW EQ screen showing input of filter labels.



Here is a partial listing of the filters generated by REW

```
EQ Dec 1 2 Bass TL89.6 20-410 1db.yml - Notepad
File Edit View
filters:
  EQ Dec 1 2 Bass TL89.6 20-410 1db_1:
    parameters:
      freq: 30.65
      gain: -3.0
      q: 12.206
      type: Peaking
    type: Biquad
  EQ Dec 1 2 Bass TL89.6 20-410 1db_2:
    parameters:
      freq: 36.0
      gain: 2.4
      q: 12.0
      type: Peaking
    type: Biquad
  EQ Dec 1 2 Bass TL89.6 20-410 1db_3:
    parameters:
      freq: 38.1
      gain: 2.0
      q: 13.807
      type: Peaking
    type: Biquad
  EQ Dec 1 2 Bass TL89.6 20-410 1db_4:
    parameters:
      freq: 43.05
      gain: -7.9
      q: 6.734
      type: Peaking
    type: Biquad
  EQ Dec 1 2 Bass TL89.6 20-410 1db_5:
    parameters:
      freq: 43.05
      gain: -7.9
      q: 6.734
      type: Peaking
    type: Biquad
Ln 15, Col 17 | 100% | Unix (LF) | UTF-8
```

It is these filters that are cut'n'pasted to the config file in the Filters section.

```
UL5 T 32 Biqs XO5 Del Gain PF.yml - Notepad
File Edit View
filters:
  Delay 5ms:
    parameters:
      delay: 5
      subsample: false
      unit: ms
    type: Delay
  EQ Dec 1 2 Bass TL89.6 20-410 1db_1:
    parameters:
      freq: 30.65
      gain: -3
      q: 12.206
      type: Peaking
    type: Biquad
  EQ Dec 1 2 Bass TL89.6 20-410 1db_10:
    parameters:
      freq: 245
      gain: -9.1
      q: 4.444
      type: Peaking
    type: Biquad
  EQ Dec 1 2 Bass TL89.6 20-410 1db_11:
    parameters:
      freq: 316
      gain: -9
      q: 3.771
      type: Peaking
    type: Biquad
  EQ Dec 1 2 Bass TL89.6 20-410 1db_12:
    parameters:
      freq: 326
      gain: 10
Ln 1, Col 1 | 100% | Unix (LF) | UTF-8
```

and the Pipeline for Bass

```
UL5 T 32 Biqs XO5 Del Gain PF.yml - Notepad
File Edit View
names:
- volume
type: Filter
- channel: 1
names:
- volume
type: Filter
- channel: 2
names:
- volume
- EQ Dec 1 2 Bass TL89.6 20-410 1db_1
- EQ Dec 1 2 Bass TL89.6 20-410 1db_2
- EQ Dec 1 2 Bass TL89.6 20-410 1db_3
- EQ Dec 1 2 Bass TL89.6 20-410 1db_4
- EQ Dec 1 2 Bass TL89.6 20-410 1db_5
- EQ Dec 1 2 Bass TL89.6 20-410 1db_6
- EQ Dec 1 2 Bass TL89.6 20-410 1db_7
- EQ Dec 1 2 Bass TL89.6 20-410 1db_8
- EQ Dec 1 2 Bass TL89.6 20-410 1db_9
- EQ Dec 1 2 Bass TL89.6 20-410 1db_10
- EQ Dec 1 2 Bass TL89.6 20-410 1db_11
- EQ Dec 1 2 Bass TL89.6 20-410 1db_12
- EQ Dec 1 2 Bass TL89.6 20-410 1db_13
- EQ Dec 1 2 Bass TL89.6 20-410 1db_14
- XO-Bass-Dec-4-LR96-HP330Hz-4096T
- Gain -5.8db
type: Filter
- channel: 3
names:
- volume
- EQ Dec 1 2 Bass TL89.6 20-410 1db_1
- EQ Dec 1 2 Bass TL89.6 20-410 1db_2
Ln 42, Col 17 | 100% | Unix (LF) | UTF-8
```

This process is repeated for Mid and High.