

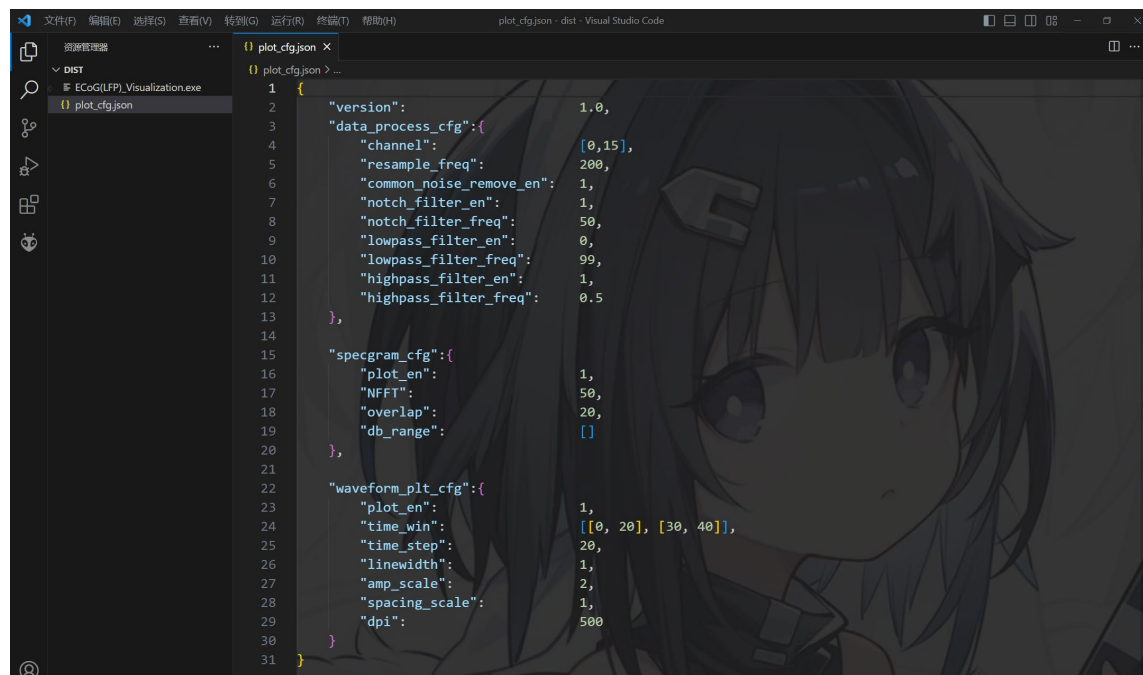


确保ECoG(LFP)_Visualization.exe和plot_cfg.json在同个文件夹下

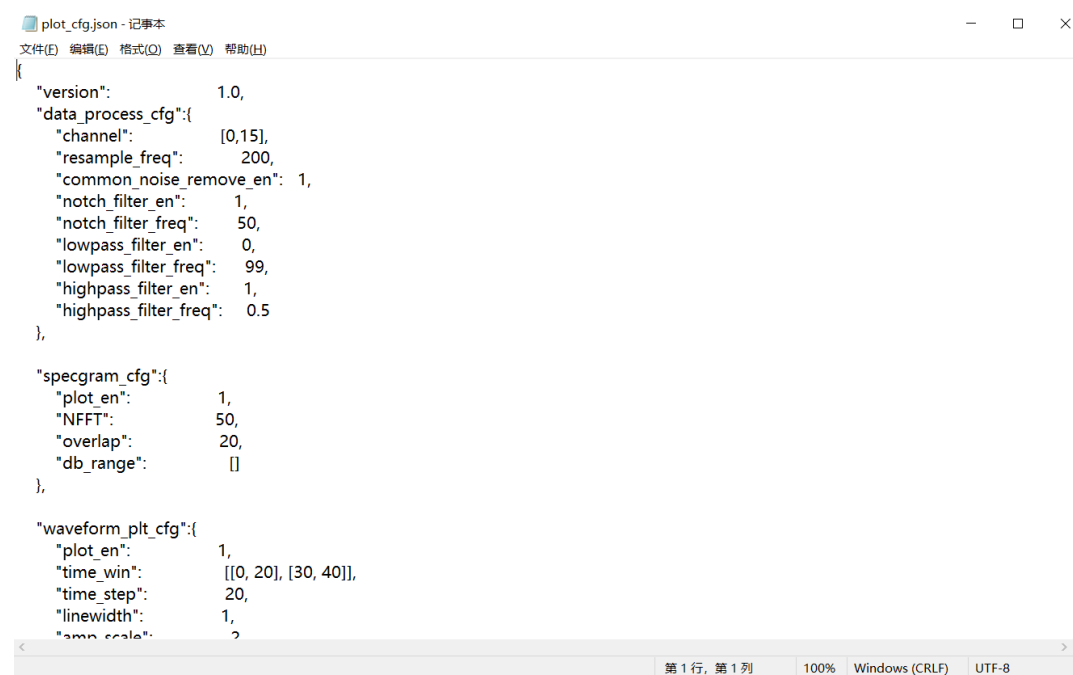
<input type="checkbox"/> 名称	修改日期	类型	大小
 ECoG(LFP)_Visualization.exe	2023/6/8 1:00	应用程序	62,970 KB
<input type="checkbox"/>  plot_cfg.json	2023/6/8 0:54	JSON 源文件	1 KB

plot_cfg.json文件保存画图相关的各项配置信息，可使用任意编辑器打开。**切记编辑时不要出现任何的中文标点符号！！** 空格和缩进仅为了对齐，不影响文件格式。



```
1 {
2   "version": 1.0,
3   "data_process_cfg": {
4     "channel": [0, 15],
5     "resample_freq": 200,
6     "common_noise_remove_en": 1,
7     "notch_filter_en": 1,
8     "notch_filter_freq": 50,
9     "lowpass_filter_en": 0,
10    "lowpass_filter_freq": 99,
11    "highpass_filter_en": 1,
12    "highpass_filter_freq": 0.5
13  },
14  "spectrogram_cfg": {
15    "plot_en": 1,
16    "NFFT": 50,
17    "overlap": 20,
18    "db_range": []
19  },
20  "waveform_plt_cfg": {
21    "plot_en": 1,
22    "time_win": [[0, 20], [30, 40]],
23    "time_step": 20,
24    "linewidth": 1,
25    "amp_scale": 2,
26    "spacing_scale": 1,
27    "dpi": 500
28  }
29 }
```

VS Code



```
{
  "version": 1.0,
  "data_process_cfg": {
    "channel": [0, 15],
    "resample_freq": 200,
    "common_noise_remove_en": 1,
    "notch_filter_en": 1,
    "notch_filter_freq": 50,
    "lowpass_filter_en": 0,
    "lowpass_filter_freq": 99,
    "highpass_filter_en": 1,
    "highpass_filter_freq": 0.5
  },
  "spectrogram_cfg": {
    "plot_en": 1,
    "NFFT": 50,
    "overlap": 20,
    "db_range": []
  },
  "waveform_plt_cfg": {
    "plot_en": 1,
    "time_win": [[0, 20], [30, 40]],
    "time_step": 20,
    "linewidth": 1,
    "amp_scale": 2
  }
}
```

记事本

```
plot_cfg.json X
plot_cfg.json > ...
1 {
2   "version": 1.0,
3   "data_process_cfg": {
4     "channel": [0, 15],
5     "resample_freq": 200,
6     "common_noise_remove_en": 1,
7     "notch_filter_en": 1,
8     "notch_filter_freq": 50,
9     "lowpass_filter_en": 0,
10    "lowpass_filter_freq": 99,
11    "highpass_filter_en": 1,
12    "highpass_filter_freq": 0.5
13  },
14
15  "spectrogram_cfg": {
16    "plot_en": 1,
17    "NFFT": 50,
18    "overlap": 20,
19    "db_range": []
20  },
21
22  "waveform_plt_cfg": {
23    "plot_en": 1,
24    "time_win": [[0, 20], [30, 40]],
25    "time_step": 20,
26    "linewidth": 1,
27    "amp_scale": 2,
28    "spacing_scale": 1,
29    "dpi": 500
30  }
31 }
```

包括四大项:

- version: 版本信息, **勿修改!**
- data_process_cfg: 数据处理参数
- spectrogram_cfg: 时频图画图参数
- waveform_plt_cfg: 波形图画图参数

```
{} plot_cfg.json X
{} plot_cfg.json > ...
1  {
2    "version": 1.0,
3    "data_process_cfg": {
4      "channel": [0, 15],
5      "resample_freq": 200,
6      "common_noise_remove_en": 1,
7      "notch_filter_en": 1,
8      "notch_filter_freq": 50,
9      "lowpass_filter_en": 0,
10     "lowpass_filter_freq": 99,
11     "highpass_filter_en": 1,
12     "highpass_filter_freq": 0.5
13   },
14   "spectrogram_cfg": {
15     "plot_en": 1,
16     "NFFT": 50,
17     "overlap": 20,
18     "db_range": []
19   },
20   "waveform_plt_cfg": {
21     "plot_en": 1,
22     "time_win": [[0, 20], [30, 40]],
23     "time_step": 20,
24     "linewidth": 1,
25     "amp_scale": 2,
26     "spacing_scale": 1,
27     "dpi": 500
28   }
29 }
30
31 }
```

data_process_cfg:

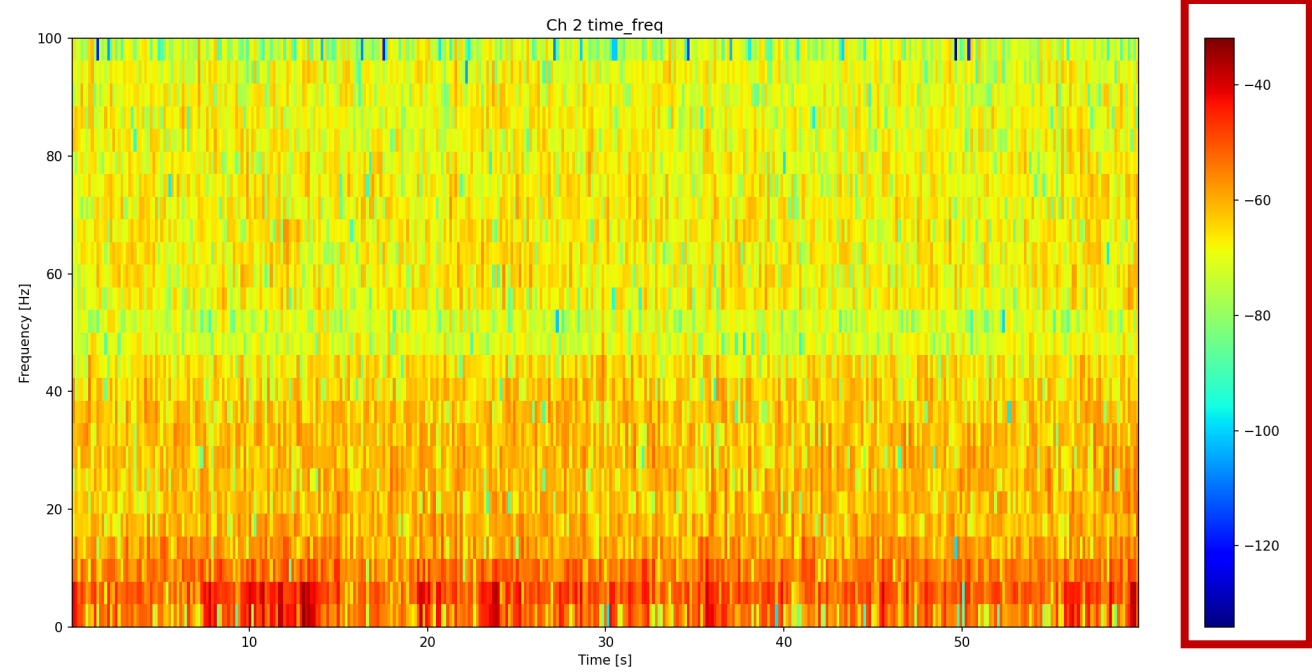
- channel: 选择要画图的通道，如图[0, 15]表示选择通道0-15.
- resample_freq: 降采样频率，最小值为200Hz.
- common_noise_remove_en: 是否开启去除共模噪声功能，1开启，0关闭。
- (notch/lowpass/highpass)_filter_en: 是否开启陷波/低通/高通滤波器。
- notch_filter_freq: 陷波滤波器频率，当前支持50/60 Hz.
- (lowpass/highpass)_filter_freq: 低通/高通滤波器频率，须小于降采样频率/2.（奈奎斯特采样定理）

```
{} plot_cfg.json X
{} plot_cfg.json > ...
1  {
2    "version":                1.0,
3    "data_process_cfg":{
4      "channel":              [0,15],
5      "resample_freq":        200,
6      "common_noise_remove_en": 1,
7      "notch_filter_en":      1,
8      "notch_filter_freq":    50,
9      "lowpass_filter_en":    0,
10     "lowpass_filter_freq":   99,
11     "highpass_filter_en":    1,
12     "highpass_filter_freq":  0.5
13   },
14
15   "specgram_cfg":{
16     "plot_en":                1,
17     "NFFT":                   50,
18     "overlap":                20,
19     "db_range":               []
20   },
21
22   "waveform_plt_cfg":{
23     "plot_en":                1,
24     "time_win":               [[0, 20], [30, 40]],
25     "time_step":              20,
26     "linewidth":              1,
27     "amp_scale":              2,
28     "spacing_scale":          1,
29     "dpi":                    500
30   }
31 }
```

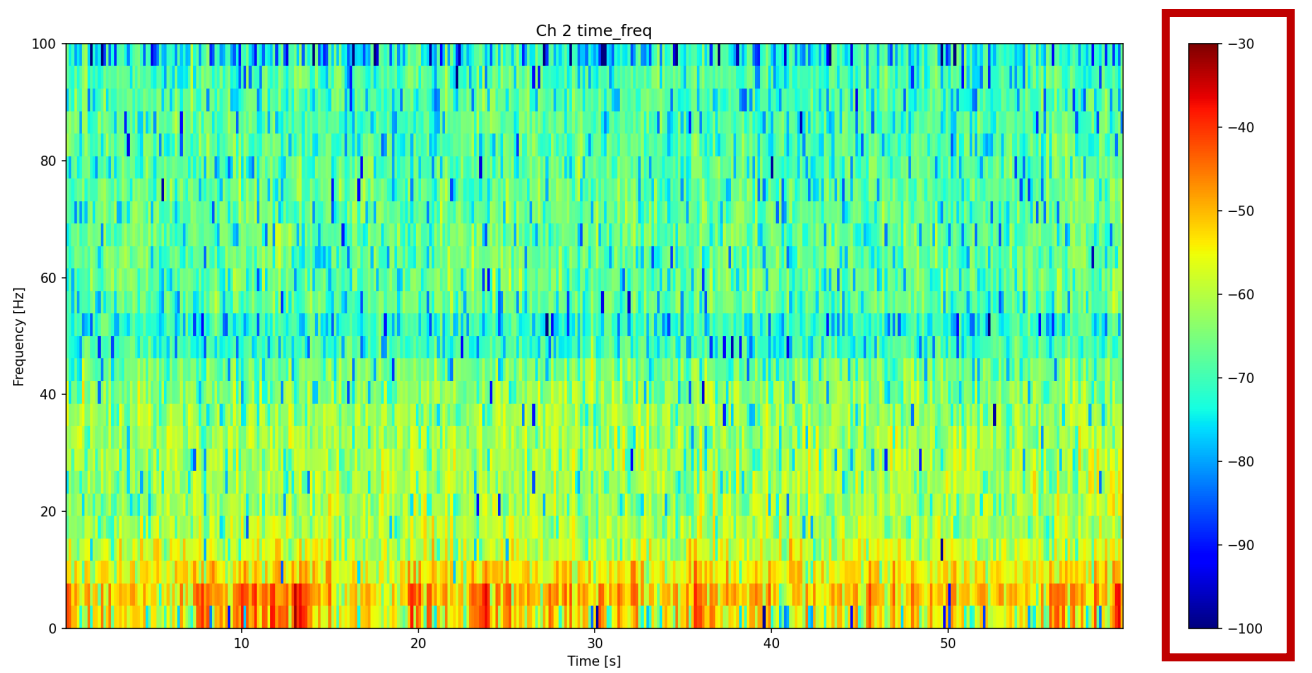
specgram_cfg:

- plot_en:是否画时频图
- NFFT: 时频图上每一个时间点的频谱是截取该时间点为中心的一小段信号进行频谱计算, NFFT代表这一小段信号的长度 (采样点数量) .
- overlap: 相邻两个时间点截取的信号之间重叠的长度 (采样点数量) 。
- db_range: 指定时频图右侧colorbar的上限和下限值, 若为空则自动设置, 详见下一页

```
"db_range": []
```



```
"db_range": [-100, -30]
```




```
{} plot_cfg.json ×
{} plot_cfg.json > ...
1  {
2    "version": 1.0,
3    "data_process_cfg": {
4      "channel": [0, 15],
5      "resample_freq": 200,
6      "common_noise_remove_en": 1,
7      "notch_filter_en": 1,
8      "notch_filter_freq": 50,
9      "lowpass_filter_en": 0,
10     "lowpass_filter_freq": 99,
11     "highpass_filter_en": 1,
12     "highpass_filter_freq": 0.5
13   },
14
15   "spectrogram_cfg": {
16     "plot_en": 1,
17     "NFFT": 50,
18     "overlap": 20,
19     "db_range": []
20   },
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22   "waveform_plt_cfg": {
23     "plot_en": 1,
24     "time_win": [[0, 20], [30, 40]],
25     "time_step": 20,
26     "linewidth": 1,
27     "amp_scale": 2,
28     "spacing_scale": 1,
29     "dpi": 500
30   }
31 }
```

waveform_plt_cfg:

- plot_en: 是否画波形图
- time_win: 要画波形图的时间范围.
 - 自动分隔, 每段长度取决于time_step
- "time_win": [],
- 一段0-20秒:
 - "time_win": [[0, 20]],
- 两段0-20、30-40秒:
 - "time_win": [[0, 20], [30, 40]],
- 三段0-20、30-40、35-50秒:
 - "time_win": [[0, 20], [30, 40], [35, 50]],
- 更多段。。。。
- time_step: 时间窗口自动分隔模式下, 每一段的长度, 例如对于一段60秒的数据, 设置time_step为20, 则输出3张波形图, 分别为0-20、20-40、40-60秒。
- linewidth: 波形线宽
- amp_scale: 波形幅值scale bar的缩放系数, 例如设为2时代表放大到2倍。
- spacing_scale: 波形间隔的缩放系数
- dpi: 波形图的dpi, 值越大则图像越清晰

操作流程：设置好plot_cfg.json并保存，打开exe文件，选择RHD文件，点击开始，等待完成。产生的图像会保存在RHD文件所在的文件夹中。

