Bug Fix for htn calculation in get_PSDs

COM Commit Request Number 4p9_6

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Summary

- htn is the sampled pulse response that includes CTLE
- It is used to calculate the transmitter output noise power spectral density in get_PSDS function

- Updates to htn:
  1. Fix an off-by-one indexing error on the creation of htn
  2. Include the final noise sample of htn that was cut off

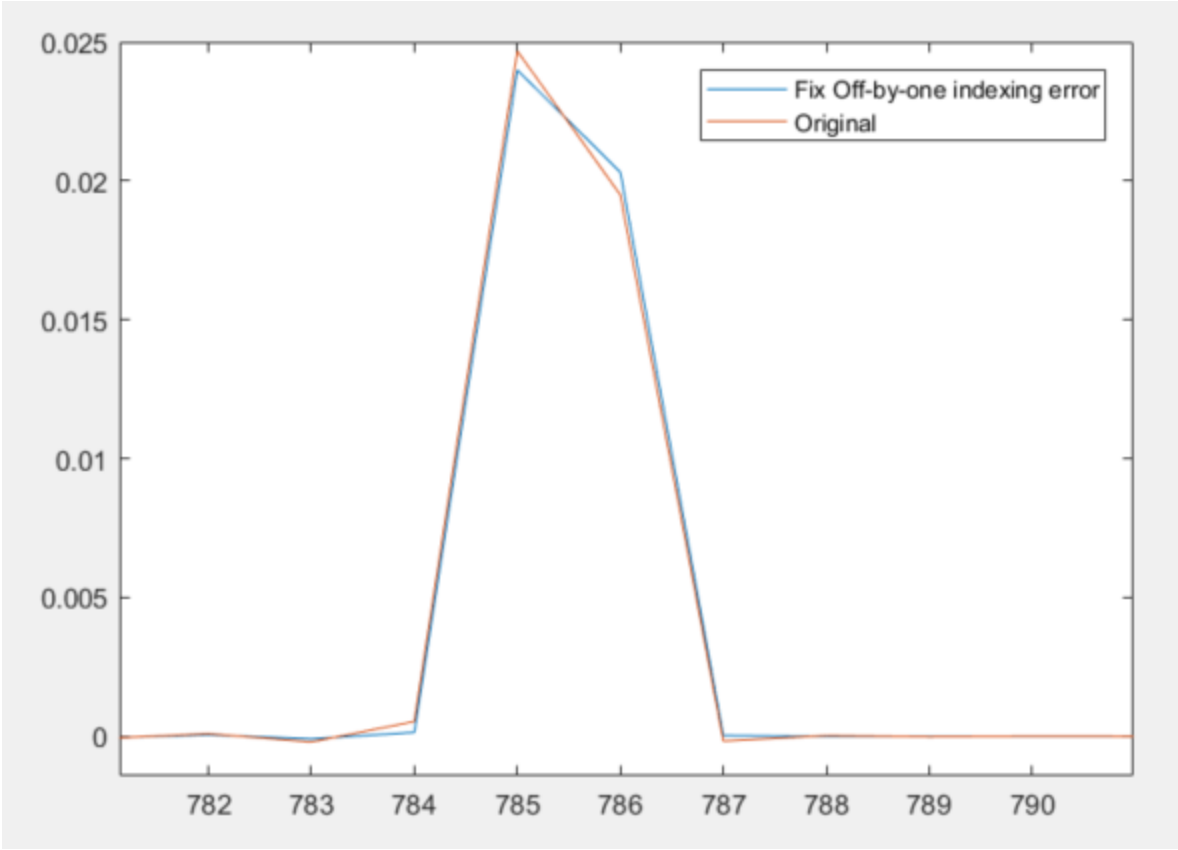
- Impact:
  - In limited testing, observed less than 0.01dB COM change from the bug fix. It is unknown if there are channels that would show meaningful COM change.

Off-by-one fix

```
138     -   htn=htn(mod(cursor_i,M)+1:end-mod(cursor_i,M)); % align to sample point
    138 +   % align to sample point
    139 +   htn=htn(mod(cursor_i-1,M)+1:end);
```

- Red is removed line. Green is added line.
- The original code did not subtract 1 from cursor_i when finding mod.
- Example:
  - cursor_i = 64, M = 32
  - Old Code: mod(64,32)+1 = 1
  - New Code: mod(64-1,32)+1 = 32
  - The old code would sample at [1 33 65 97 …]. This misses the cursor_i value of 64 by one index.
  - The new code samples at [32 64 96 …]. This aligns to cursor_i

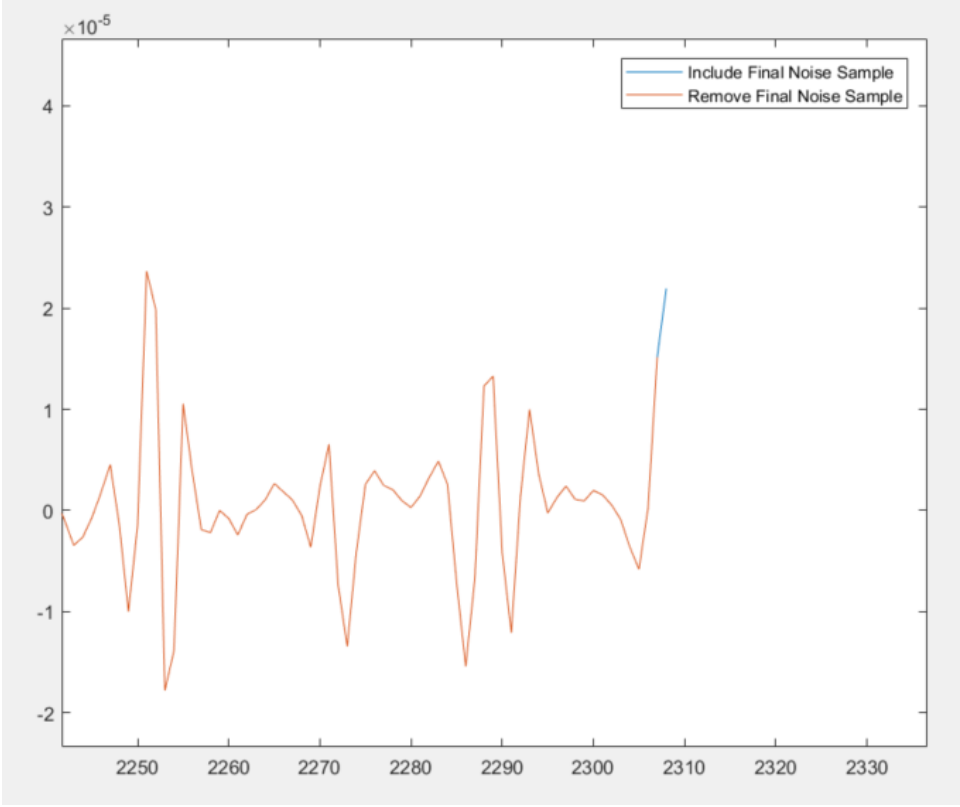
Off-by-one fix (comparison plot)



Include final noise sample

```
140 -     htn=[ htn(1:floor(length(htn)/M)*M) ];
141 -     htn= [htn zeros(1,num_ui*M-length(htn)) ];
```

- Remove these 2 lines. They are not necessary to align the length of htn to proper number of UI. In addition, the first line uses “floor”, so it will chop off the last noise point unless the length is already an exact multiple of M.
- The final noise sample should be very small, so this update will have no meaningful impact.
  - The plot shows an example of including vs. removing. The extra noise is about 20uV



Full Diff

src/get_PSDs.m

```
...  ...  @@ -135,13 +135,13 @@ else % find noise for item that set have tx ffe for each loop
135  135              htn=filter(ones(1,param.samples_per_ui),1, chdata(1).ctle_imp_response);
136  136          end
137  137      end
138       -    htn=htn(mod(cursor_i,M)+1:end-mod(cursor_i,M)); % align to sample point
     138  +    % align to sample point
     139  +    htn=htn(mod(cursor_i-1,M)+1:end);
139  140      htn=reshape(htn,1,[]); % make row vectors
140       -    htn=[ htn(1:floor(length(htn)/M)*M) ];
141       -    htn= [htn zeros(1,num_ui*M-length(htn)) ];
142  141      htn=htn(1:M:end);% resample
143       -    if num_ui>length(htn)
144       -        hext=[htn zeros(1,num_ui-length(htn))];
     142  +    len_htn = length(htn);
     143  +    if num_ui>len_htn
     144  +        hext=[htn zeros(1,num_ui-len_htn)];
145  145      else
146  146          hext=htn(1:num_ui);
147  147      end
...  ...
```

Changes to config

- Changes to config
  - None
- Changes to output
  - small numerical differences on cases tested
- Download beta test code
  - Beta Test: htn Indexing Bug Fix