

Bug Fix **when setting either or both A_{fe} and A_{ne} to zero**

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IEEE 802.3 Channel Operating Margin (COM) Open Source Project Ad Hoc

History

Revision	Date	Comment
0.5	02-Dec-2025	▪ Initial Draft.
1.0	05-Dec-2025	▪ Revised presentation to have only one proposal involving only max().

Purpose for Commit Request

- Bug related to setting A_fe and/or A_ne to zero in the COM spreadsheet, which leads to a crash of the COM tool code.
- Bug exists in v4p12p0 and earlier versions.
- Fixing this issue will simplify COM runs with and without crosstalk, as the same function call can be used while only modifying the COM spreadsheet values for A_fe and A_ne.
- Branch: Afe_AndOr_Ane_Zero.
https://opensource.ieee.org/hansel.dsilva/com_code/-/branches
- Git branch file pointer:
https://opensource.ieee.org/hansel.dsilva/com_code/-/blob/Afe_AndOr_Ane_Zero/release/com_ieee8023_4p12p0_AfeAneAndOrZero.m?ref_type=heads

Navigate to Hansel_Dsilva/com_code

https://opensource.ieee.org/802-com/com_code/-/forks

The screenshot shows the IEEE Open Source Project page for the 802-com/com_code repository. The page displays a list of forks, with Hansel Dsilva's fork highlighted by a red box and a black arrow pointing to it. The arrow contains the text "Navigate to Hansel_Dsilva/com_code".

11 forks: 8 public, 0 internal, and 3 private

Forker	Repository	Description	Stars	Forks	Issues	Comments	Updated
Baidyanath Dutta	com_code	Merge branch 'KR_PKGB_CONFIG_for_d2p1' into 'main'	0	0	0	0	Updated 2 months ago
Norman Swenson	com_code	add 4p10p0 beta release	0	0	0	0	Updated 4 months ago
Mohammad Shakiba	com_code	add configuration file folder and some configuration files	0	0	0	0	Updated 4 months ago
Adee Ran	com_code	Merge branch 'signal_flow_graph' into 'main'	0	0	0	0	Updated 3 months ago
Hansel Dsilva	com_code	rename for 4.12.0_beta1 to 4.12.0	0	0	0	0	Updated 16 minutes ago
Kent Lusted	com_code	rename for 4.12.0_beta1 to 4.12.0	0	0	0	0	Updated 2 weeks ago
Richard Mellitz	com_code	rename for 4.12.0_beta1 to 4.12.0	2	0	0	0	Updated 1 day ago
Adam Gregory	com_code	deleting fork version	0	0	0	0	Updated 1 month ago

Checking changes of a branch to the last release

https://opensource.ieee.org/hansel.dsilva/com_code/-/branches

The screenshot shows the IEEE Open Source project page for 'com_code'. The 'Active branches' section lists two branches: 'Afe_AndOr_Ane_Zero' (9138cd03) and 'main' (90d19cc8). The 'Afe_AndOr_Ane_Zero' branch is highlighted with a red box. A black text box with an arrow points to the 'Compare' option in the dropdown menu of the 'Afe_AndOr_Ane_Zero' branch. The dropdown menu also shows 'Delete branch'.

Use drop down in the 3 dots pulldown for Afe_AndOr_Ane_Zero and select compare. Selecting bring up the compare screen

Code Updates

- 1 m file changed.
- 0 m files added.
- No additional config csv and xlsx files are included.

src/get_PSDs.m

New or changed keywords

- Configuration file parameters.

Keywords (not case sensitive)	Default	Units	Comment
A_fe	0.385	V	▪ Transmitter differential peak output voltage of far-end aggressor. ▪ Takes values of zero and above.
A_ne	0.481	V	▪ Transmitter differential peak output voltage of near-end aggressor. ▪ Takes values of zero and above.

New Outputs

None

Summary of code changes page 1

get_PSDs.m	<u>Current</u>, <pre>iphase(xchan)=find(hxn==max(hxn));</pre> <u>Proposal</u>, <pre>[~, iphase(xchan)] = max(hxn); % Return max index, applicable to vector of non-zero and zero values</pre>

Example,

1] Non-zero values

```
hxn= [0 0.2 0.3 0.4];
```

```
temp= hxn== max(hxn); % [0 0 0 1]
```

```
temp_1= find(temp); % [4]
```

2] Zero values

```
hxn= [0 0 0 0];
```

```
temp= hxn== max(hxn); % [1 1 1 1]
```

```
temp_1= find(temp); % [1 2 3 4]
```

What it does,

- max(hxn) finds the maximum value in the array hxn.
- hxn == max(hxn) creates a logical array where the elements equal to the maximum become true.
- find(...) returns the indices of those true elements.
- That index (or indices) are assigned to iphase(xchan).

Issue,

- If hxn is all zeros, then max(hxn) is 0 and all elements equal the max.
- find() will return multiple indices (1,2,3,4,...).
- This can break the code if iphase(xchan) expects a single scalar index.

Thank You