

# COM Commit Request 4p10\_1

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

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# Purpose for Commit Request

- ❑ COM Implementation for SCMR
- ❑ Early Implementation IEEE802.3dj D2.0 comment #50
  - Update SCMR\_CH code and config parameters for slide 7 and 8 of mellitz\_3dj\_adhoc\_02\_2506
  - Enable SCMR CD and DC as well as exploratory computations in the frequency domain also in mellitz\_3dj\_adhoc\_02\_2506.
- ❑ Branch: SCMR
- ❑ Git branch file pointer  
[https://opensource.ieee.org/richard.mellitz/com\\_code/-/raw/SCMR/release/com\\_ieee8023\\_4p10\\_SCMR.m?ref\\_type=heads&inline=false](https://opensource.ieee.org/richard.mellitz/com_code/-/raw/SCMR/release/com_ieee8023_4p10_SCMR.m?ref_type=heads&inline=false)

# Navigate to Richard\_Mellitz/com\_code

First step to review changes of a branch to the last release

## Projects

Yours 5 Starred 0

All Personal

A 802-COM / compliance / About 🔒 Maintainer

A 802-COM / About 🌐 Maintainer

C 802-COM / compliance / com\_code 🔒 Maintainer

C 802-COM / com\_code 🌐 Maintainer

C Richard Mellitz / com\_code 🌐 Owner  
Workspace for Rich's COM development

Navigate to Richard Mellitz  
com\_code

# Checking changes of a branch to the last release

Use drop down in the 3 dots for SCMR and select compare

The screenshot shows the IEEE 802.3 Channel Operating Margin (COM) Open Source Project repository page. The left sidebar contains navigation links: Project, com\_code, Pinned, Issues, Merge requests, Manage, Plan, Code, Merge requests, Repository, and Branches. The main content area displays the 'Active branches' section. The 'SCMR' branch is highlighted, showing its commit hash '98946eee' and a description 'adding DC and CD SCMR'. A dropdown menu is open for the SCMR branch, showing options 'Compare' and 'Delete branch'. A red circle highlights the dropdown menu, and a black arrow points from a text box to the 'Compare' option.

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

# Code updates

- ❑ 11 m files changed
- ❑ 1 m file added
- ❑ Some config csv and xlsx files are included

src/COM\_FD\_to\_TD.m  
src/FD\_Processing.m  
src/SNDR\_ref.m  
src/com\_ieee8023\_.m  
src/get\_cm\_noise.m  
src/get\_pdf\_from\_sampled\_signal.m  
src/make\_full\_pkg.m  
src/read\_ParamConfigFile.m  
src/read\_p4\_s4params.m  
src/read\_s4p\_files.m  
src/s21\_pkg.m  
src/writecsv\_transposed.m

config\_templates/KR/200G/config\_com-4p10p0\_802p3dj\_d2p0\_200G\_KRCR\_PKGB\_07\_30\_25.xlsx  
config\_templates/KR/200G/config\_com-4p10p0\_802p3dj\_d2p0\_200G\_KRCR\_PKGB\_08\_01\_25.csv  
config\_templates/KR/200G/config\_com-4p10p0\_802p3dj\_d2p0\_200G\_KRCR\_PKGB\_08\_01\_25.xlsx  
config\_templates/KR/200G/config\_com\_4p10p0\_802p3dj\_d2p0\_200G\_KRCR\_PKGA\_07\_18\_25.xlsx  
config\_templates/KR/200G/config\_com\_4p10p0\_802p3dj\_d2p0\_200G\_KRCR\_PKGA\_07\_30\_25.xlsx  
config\_templates/KR/200G/config\_com\_4p10p0\_802p3dj\_d2p0\_200G\_KRCR\_PKGA\_08\_01\_25.csv  
config\_templates/KR/200G/config\_com\_4p10p0\_802p3dj\_d2p0\_200G\_KRCR\_PKGA\_08\_01\_25.xlsx  
config\_templates/KR/200G/config\_com\_dj\_200G\_CAKR\_178\_PKGA\_05\_21\_2025.xlsx  
config\_templates/testing\_SCMR/config\_com\_802p3dj\_200G\_testing\_SCMR\_C2M\_\_06\_16\_25.xlsx  
config\_templates/testing\_SCMR/config\_com\_802p3dj\_200G\_testing\_SCMR\_KRCR\_PKGA\_\_06\_17\_25.xlsx  
config\_templates/testing\_SCMR/config\_com\_802p3dj\_200G\_testing\_SCMR\_KRCR\_PKGB\_\_06\_17\_25.xlsx

# New or changed keywords

## ❑ Configuration file parameters

| Key words (not case sensitive) | Default | Units   |                                                                                                                                                                                                            |
|--------------------------------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DO_NOT_COMPUTE_COM             | 0       | Logical | Allows COM code to operate up to the point of where equalization occur for the first time.<br>Report out for ICN,'s ILD, ERL's, SCMR, SNDR<br><b>Caveat:</b> only uses the <b>first</b> package selection. |
| NO_COM                         | 0       | Logical | Synonym for "DO_NOT_COMPUTE_COM"                                                                                                                                                                           |
| F2                             | fb      | GHz     | Aligning to std: Used for ICN, SN_MDFEXT, SCMR_FD                                                                                                                                                          |
| F2_ILD                         | f2      | GHz     | Aligning to std: Used in FOM_ILD computations                                                                                                                                                              |
| TIMESTAMP                      | False   | Logical | Debug feature: a time stamp string is appended to saved file names                                                                                                                                         |
| WRITE_CSV_TRANSPOSED           | False   | Logical | Debug feature: Writes the csv file one field per row                                                                                                                                                       |

# New Outputs

| P_signal_sigma_FD      | <a href="#">mellitz 3dj adhoc 02 250626</a> | slide 10 report signal RMS too |
|------------------------|---------------------------------------------|--------------------------------|
| P_signal_FD            | <a href="#">mellitz 3dj adhoc 02 250626</a> | slide 10                       |
| SCMR_FD_CD_ch_dB       | <a href="#">mellitz 3dj adhoc 02 250626</a> | slide 10                       |
| SCMR_FD_DC_ch_dB       | <a href="#">mellitz 3dj adhoc 02 250626</a> | SDC in addition to slide 10    |
| fitted_IL_dB_at_F2_ild | Using F2_ild                                |                                |
| VCM_CD_HF_mV           | <a href="#">mellitz 3dj adhoc 02 250626</a> | slide 9                        |
| VCM_DC_HF_mV           | <a href="#">mellitz 3dj adhoc 02 250626</a> | SDC in addition to slide 9     |
| SCMR_TD_CD_ch_dB       | <a href="#">mellitz 3dj adhoc 02 250626</a> | slide 9                        |
| <b>SCMR_CH</b>         | <b>3dj d2.1</b> same as SCMR_TD_CD_ch_dB    |                                |
| SCMR_TD_CD_ch_pk_dB_   | <a href="#">mellitz 3dj adhoc 02 250626</a> | slide 9 (old)                  |
| SCMR_TD_DC_ch_dB       | <a href="#">mellitz 3dj adhoc 02 250626</a> | SDC in addition to slide 9     |
| SCMR_TD_DC_ch_pk_dB_   | <a href="#">mellitz 3dj adhoc 02 250626</a> | SDC in addition to slide 9     |
| Sigma_ts_sqrd          | <a href="#">mellitz 3dj adhoc 02 250626</a> | slide 9                        |
| P_signal_TD            | Same as Sigma_ts_sqrd                       |                                |

# Summary of code changes page 1

| COM_FD_to_TD.m  | New pulse responses included in chdata structure<br>chdata(i).uneq_pulse_response_raw_filtered<br>chdata(i). uneq_pulse_CD_response_filtered and<br>chdata(i). uneq_pulse_DC_response_filtered<br>Compute and report VCM_DC and VCM_CD CDF in get_cm_noise<br>Compute and report Sigma_ts_sqrt<br>Compute and report SCMR_TD_CD_ch_dB and SCMR_TD_CD_ch_dB |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FD_Processing.m | FD computation in <a href="#">mellitz 3dj adhoc 02 250626</a> slide 10                                                                                                                                                                                                                                                                                     |
| SNDR_ref.m      | Matlab syntax cleanup                                                                                                                                                                                                                                                                                                                                      |
| com_ieee8023_.m | Pull down added in config file dialog box for a csv file type.<br>Provision to add timestamp string to CSV_FILE and saved mat report file<br>Provision to write csv file in rows format.                                                                                                                                                                   |

# Summary of code changes page 2

| get_cm_noise.m                | results.CMn is for CM CD. results.DCn alsodded                      |
|-------------------------------|---------------------------------------------------------------------|
| get_pdf_from_sampled_signal.m | Matlab syntax cleanup                                               |
| make_full_pkg.m               | Support for added from DC CM to DC and CD CM ... not presently used |
| read_ParamConfigFile.m        | Added support for new keywords                                      |
| read_p4_s4params.m            | Added structure for all the modal s-parameters                      |
| read_s4p_files.m              | Added structure for all the modal s-parameters                      |
| s21_pkg.m                     | Support for added for CM packages ... not presently used            |
| writcsv_transposed.m          | Support for writing csv file in rows format.                        |

# Thank You!