

AC Common Mode Spec by TP0v

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Contributors

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Backgrounds & Motivation

- Provide supporting materials for Comment #197 & #205
- Ideas of TP0v
 - Relaxing the IL/ILD specs as $IL < 5$ dB, due to the original $1.2 \sim 1.6$ dB IL limit is difficult to meet
 - For some specifications which are sensitive to IL, check difference among reference values & measured values
 - We defined ERL, Vf, Vpeak in D1p3 → we missed some others
- Measured AC common mode output voltage strongly depends on IL of TP0v test fixture
 - This issue had been explored in [wu_3ck_adhoc_01_090920.pdf](#)
- How to reflect this in D1p3?
 - Define difference AC Common-Mode (CM) RMS voltage at TP0v
 - Decide how to derive AC CM RMS voltage at TP0v based on AC CM RMS voltage at source

Comment #197 – TP0v for AC common-mode Voltage

- We need to define “difference between measured and reference AC common-mode output voltage”, instead of AC common-mode output voltage at TP0v directly
- Proposals
- Change “AC common-mode output voltage (max)” in Table 163-5 to “Difference between measured and reference AC common-mode output voltage (max), dV_{ACCM} ”
- Change value of AC common-mode output voltage from 30 to TBD
- Apply the same to C2C (Table 120F-1)

Comment #205 – How to derive V_{ACCM} at TP0v

- Take V_{ACCM} as the notation for “AC common-mode output voltage”
- Procedures to derive dV_{ACCM}
- Define V_{ACCM} at source (Device TX out or TP0, TBD) as TBD mV
- Derive reference V_{ACCM} based on Equation (TBD)
 - Equation is TBD
- Measured V_{ACCM} at TP0v
- Calculate difference between measured and reference AC common-mode output voltage (max), dV_{ACCM} as
 - Measured V_{ACCM} – reference V_{ACCM}
- Proposals
- Define V_{ACCM} at source (Device TX out or TP0, TBD) as TBD mV
- Change the blocks in Figure 163A-1
 - Measured $ERL, V_{fj}, V_{peak} \rightarrow$ Measured $ERL, V_{fj}, V_{peak}, V_{ACCM}$
 - Reference $ERL, V_{fj}, V_{peak} \rightarrow$ Reference $ERL, V_{fj}, V_{peak}, V_{ACCM}$
- The paragraphs in Annex 163 related to this change shall be modified accordingly
 - Some new paragraphs may need
 - Editorial license

Thank You