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802.3dj CR Calibration Suggestion

Remedy for comment #271

Noam Kutscher
Liav Ben-Artsi
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Background

- This presentation answers comment 271
- 802.3dj Cable interference testing references 110.8.4.2.1 and figure 110-3a by referencing 179.9.5.3.1
- Noise injection, to represent crosstalk, is required
- Two main methodologies to inject crosstalk can be considered
    1. Take advantage of the coupling already present in the cable/MCB connector. The cable and MCB are an integral part of the test interconnect
    2. Inject noise using a coupler at the Tx side
- Both noise injection methodologies introduce test challenges

Noise Injection Methodologies' Challenges

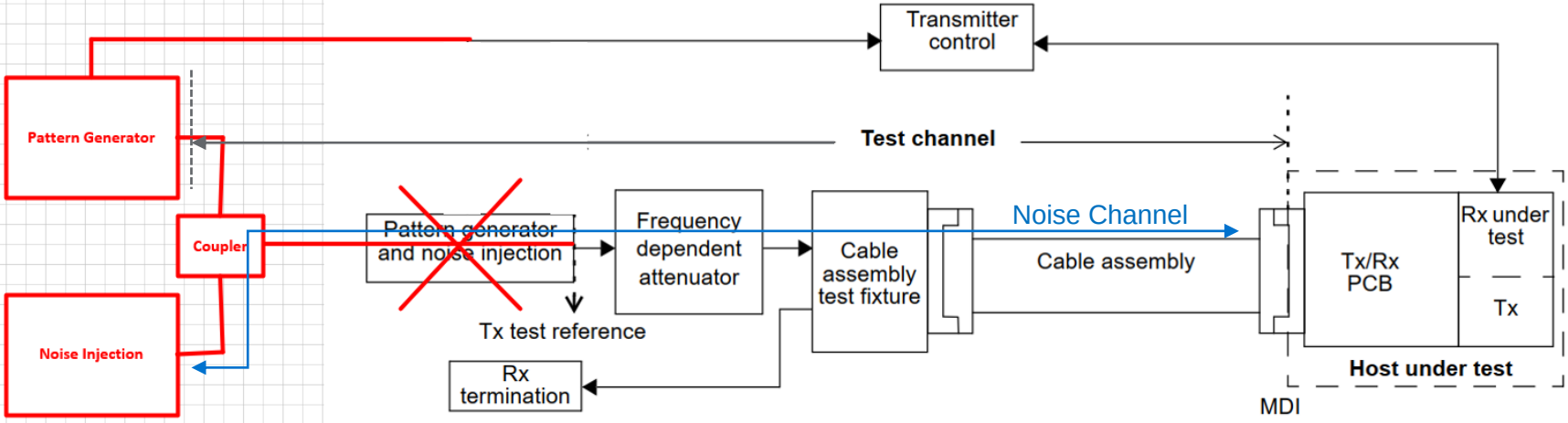
Injecting noise may follow one of these following paths:

1. Injecting noise taking advantage of connector coupling
    i. Connector coupling may be minimal requiring substantial aggressor amplitude – May not be implementable to achieve target COM, may need additional amplifying of aggressor signals, etc.
    ii. Calibration may need to be iterative, use multiple connector lanes to insert aggression, etc. ➔ Complex and somewhat not accurate
2. Use a coupler to inject the noise on the Tx side
    i. Signal after the coupler does not follow Tx or COM driver characteristics such as jitter, ISI, etc. ➔ Need to provide two separate S4P interconnect paths (Very similar to KR)
        A. Through path from Tpt to receiver going through "THRU" path of the coupler
        B. Crosstalk path from noise generator going through "crosstalk" path of the coupler
    ii. Methodology described in 2.i can be avoided if a signal generator has an integrated coupler which output follows Tpt characteristics – Methodology forces usage of specific equipment

Suggested Remedy

- Use an external coupler to inject the noise and provide two separate S4P interconnect paths (Very similar to KR)
    A. Through path from Tpt to receiver going through “THRU” path of the coupler and THRU path of connector + cable
    B. Crosstalk path from noise generator going through “crosstalk” path of the coupler and THRU path of connector + cable
- Change the figure to represent the suggested methodology according to the suggested in slide #5

Suggested Remedy



NOTE—The MDI of the host under test is not included in the test channel.

Figure 110–3a—Interference tolerance test setup

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Q&A

Thank You