# IEEE Standards Interpretation Request

Requests for interpretations should only be submitted for seeking clarification of:

- The meaning of portions of standards as they relate to specific applications; and/or
- The exact nature of the contents of the standard.

If the interpretation request meets the above criteria, complete the following and send to the stds-interps@ieee.org.

**Name: Liav Ben-Artsi**

**Email: liav@marvell.com**

**Phone: 972-4-9091623**

**Mobile: 972-54-2490802**

**IEEE Std:802.3ba-2010 ™ - (include year)**

**Standard Title:** Carrier Sense Multiple Access with Collision Detection

**Topic: Clarification regarding Annex 86A nPPI - XLPPI - CPPI electrical parameter.**

**Clause, Subclause, Annex, Figure, or Table: Annex86A Table 86A–3—nPPI module electrical output specifications at TP4.**

In table 86A-2 (copied to next page) it is specified that the compliant module can have a single ended voltage output of up to 4V (Referred to signal common) single ended.

At ***86A.4.2 nPPI module to host electrical specifications*** It is specified that: "The module electrical output shall be AC coupled, i.e., it shall present a high DC common-mode impedance at TP4."

I would appreciate understanding how the output voltage of the module can reach 4V while still meeting:
 * The AC coupling requirement
 * The eye mask coordinates Y1 and Y2(also specified in the same table (86A-3)).

In the SFF8431 Rev4.1 standard this requirement is on the module Rx side only, and in the IEEE802.3ba on both Rx and Tx.

**Table 86A–3—nPPI module electrical output specifications at TP4**

| Parameter description | Min | Max | Units | Conditions |
|---|---|---|---|---|
| Single ended output voltage tolerance | –0.3 | 4 | V | Referred to signal common |
| AC common-mode output voltage (RMS) | — | 7.5 | mV | |
| Termination mismatch at 1 MHz | — | 5 | % | |
| Differential output return loss | See 86A.4.2.1 | — | dB | 10 MHz to 11.1 GHz |
| Common-mode output return loss | See 86A.4.2.2 | — | dB | 10 MHz to 11.1 GHz |
| Output transition time, 20% to 80% | 28 | — | ps | |
| J2 Jitter output | — | 0.42 | UI | |
| J9 Jitter output | — | 0.65 | UI | |
| | **Specification values** | | | |
| Eye mask coordinates: X1, X2<br>Y1, Y2 | 0.29, 0.5<br>150, 425 | | UI<br>mV | Hit ratio = $5 \times 10^{-5}$ |
| Crosstalk source VMA, each lane | 700 | | mV | At TP1a |
| Crosstalk source transition times, 20% to 80% | 37 | | ps | At TP1a |

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**NOTE FOR RESPONDERS: Attach your response here. If you are responding to more than one interpretation request, please label your responses as "Interpretation Response #1," "Interpretation Response #2," etc.**

**Response to the Interpretation Request**

The standard is unambiguous. This request is being returned to you because the question asked does not constitute a request for interpretation but instead a request for consultation. Generally, an interpretation request is submitted when the wording of a specific clause or portion of a standard is ambiguous or incomplete. The request should state the two or more possible interpretations or the lack of completeness of the text. Note that the text that is in question refers to the output voltage ***tolerance***.