

PHY Auto Precoder Selection

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Introduction

- In D2.0 Table 45-155c
 - Register 1.2311.3:2 is “Precoder requested”
 - Configured by user. The PHY simply reads in these register bit values and sends to the link partner via InfoField.
- It may be more robust to optionally allow the PHY to choose the precoder on-the-fly based on channel and noise conditions.
- What need to be changed:
 - Clause 45
 - Add/modify 1.2311 register control bits
 - Clause 149
 - During PAM2 training, ignore link partner capability bits until the link partner InfoField bit “loc_rcvr_status” is 1.
 - This allows the link partner receiver to observe the channel and noise condition before making the final decision.

Required Changes – Clause 45

- Page 38, line 13, Table 45-155c

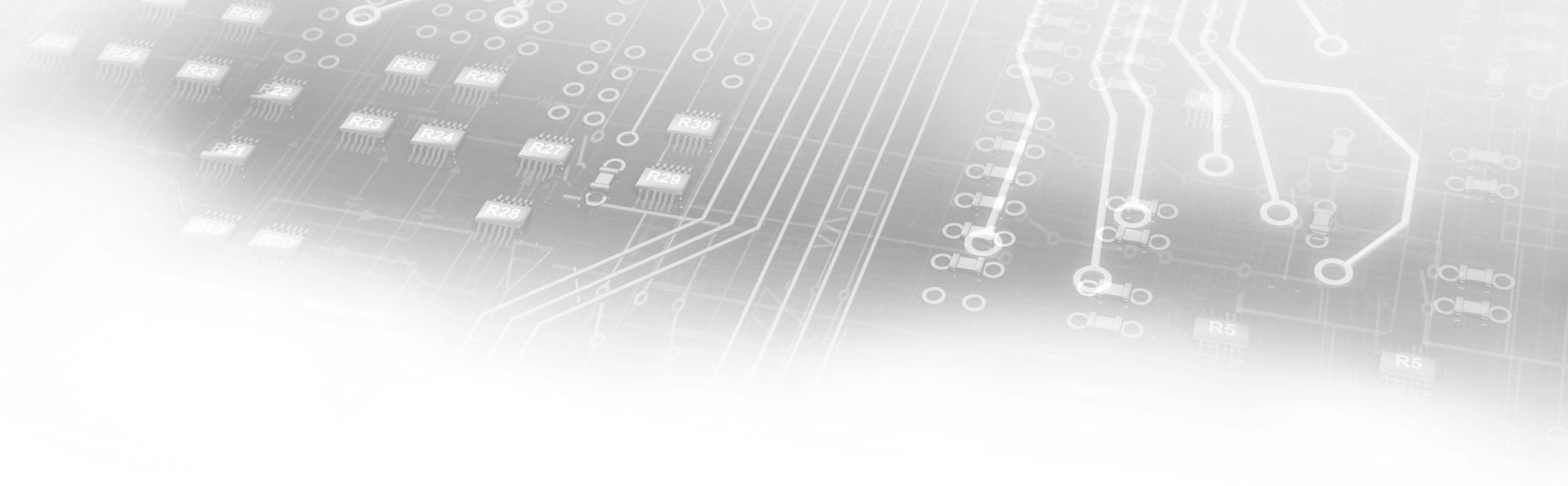
1.2311.1 0:6	Reserved	Value always 0	RO
1.2311.5	Auto precoder select	1 = The PHY is allowed to overwrite bit 1.2311.3:2 with its preferred selection. 0 = The user configured 1.2311.3:2 shall be the Precoder requested. The PHY shall not overwrite bit 1.2311.3:2.	R/W

Required Changes – Clause 45 (cont.)

- Page 38, line 40, 45.2.1.194.3, change the paragraph to:
 - Bits 1.2311.3:2 control the precoder setting requested by the PHY. **When bit 1.2311.5 is 1, the PHY is allowed to overwrite bits 1.2311.3:2 with its own selection.** The Precoder requested is encoded as the value of precoder_type defined in 149.3.2.2.19, and communicated to the link partner via Infofields as specified in 149.4.2.4.4.
- Page 38, line 32, before 45.2.1.194.2, insert 45.2.1.194.1a as follows:
 - **45.2.1.194.1a Auto precoder select (1.2311.5)**
 - **When set as a one, the PHY is allowed to overwrite bits 1.2311.3:2 with its own precoder selection. When set to a zero, the PHY shall read in 1.2311.3:2 as the Precoder requested bit values and is not allowed to overwrite these bits.**

Required Changes – Clause 149

- Page 142, line 45, 149.4.2.4.5, add one more paragraph after line 45:
 - The capability bit values shall be considered as valid only when the `loc_rcvr_status` bit is 1.



THANK YOU
