IEEE 802.3dm

Limit for Peak Voltage in ACT Transmitter

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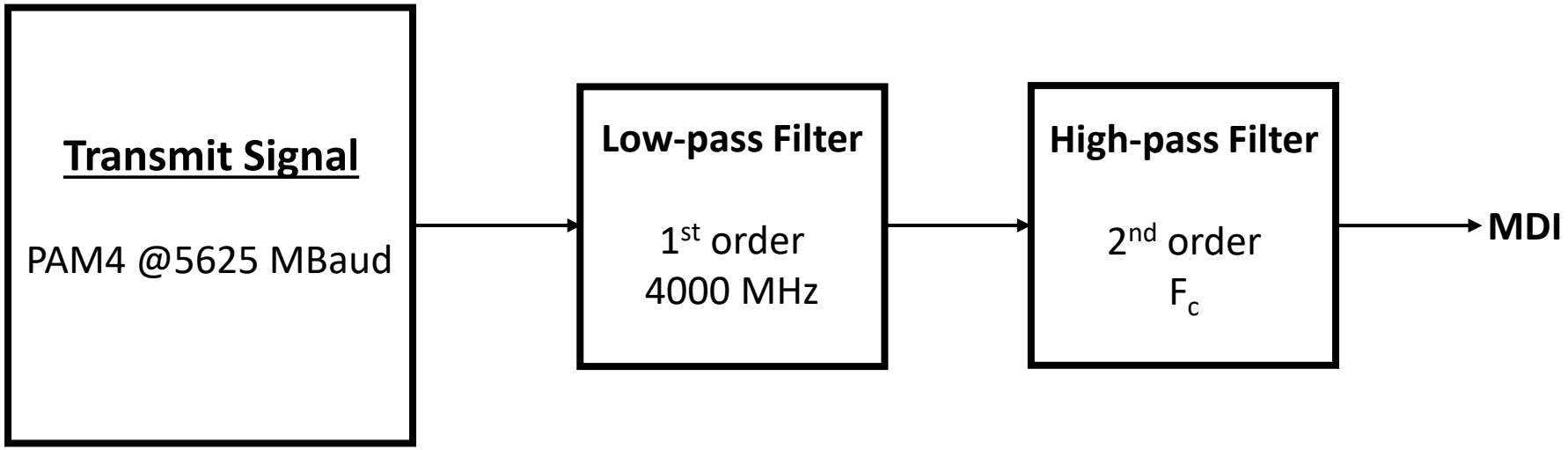
Overview

- The effect of AC-coupling circuit on maximum signal swing is presented in sedarat_3dm_01_1125.pdf

- The current specifications for maximum signal swing is based on the assumption that the AC-coupling circuit is a 2nd order high-pass filter with corner frequency of 10 MHz

- This presentation explores alternative limits on maximum signal swing for high-speed direction and for a range of corner frequencies

Simulation Model

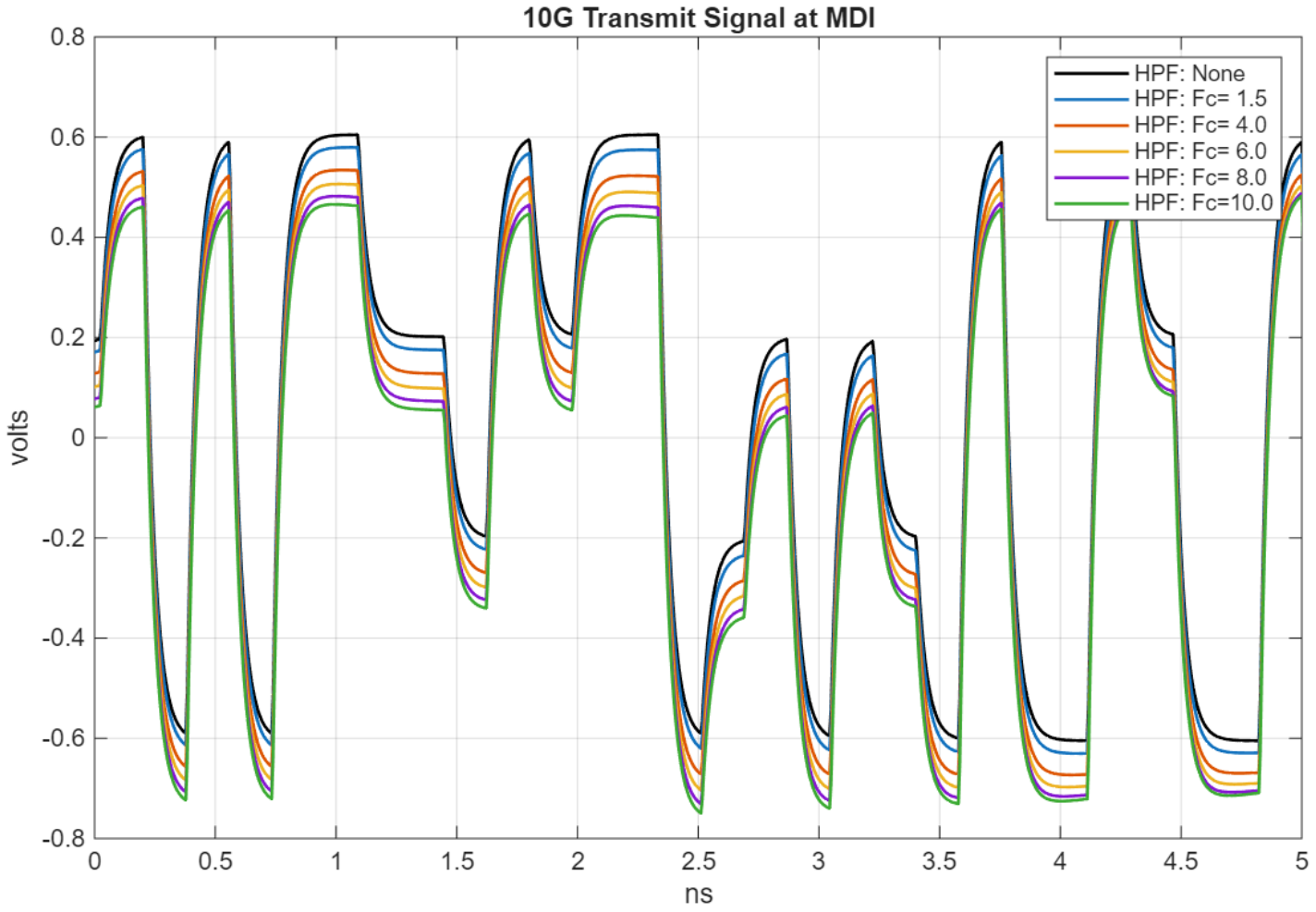


Max Signal Swing

Data Rate = 10G

HPF F_c (MHz)	Tx Swing Pk-Pk (volts)	Tx Power (dBm)
1.5	1.31	2
4	1.39	2
5	1.43	2
6	1.47	2
7	1.50	2
8	1.55	2
10	1.63	2

802.3ch →



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New Proposal

- Assuming HPF corner frequency of around 6 MHz, maximum swing is limited to 1.5 v pk-pk
- For lower data rate, scale this limit based on transmit power
- For coax use half the limits of STP to account for single-ended transmission

Table 201–17—Transmit peak-to-peak voltage limits, high speed mode

Transmit Rate	-T1 Max (V)	-V1 Max (V)
10 Gb/s	**1.5**	**0.75**
5 Gb/s	**1.2**	**0.6**
2.5 Gb/s	**0.8**	**0.4**


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Thank You