

Proposed update on Transmitter Power Excursion

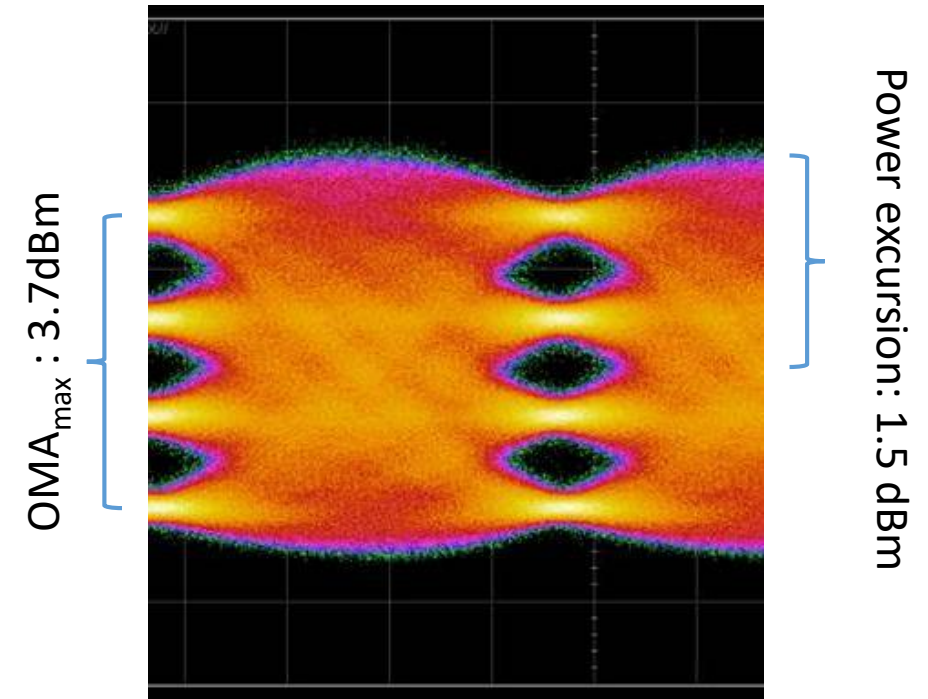
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Background

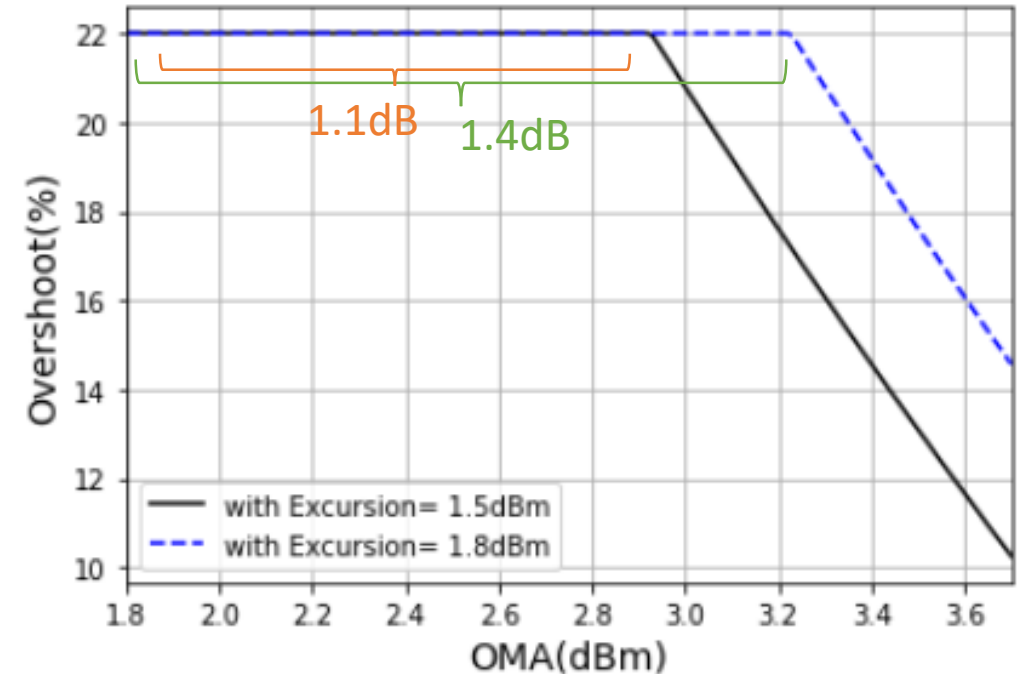
- ❑ In .3cu Draft3.1 we introduced 'Transmitter power excursion' to limit the maximum excursion from average.
- ❑ The spec replaced 'Transmitter peak-to-peak' which did not limit specifically the positive or negative excursion, but the combination of both.
- ❑ Optical transmitters tend to have smaller undershoot than overshoot, what allowed for some trading between positive and negative excursion to meet 'peak-to-peak' spec.
- ❑ We recommend the new 'power excursion' spec to be slightly higher than the previous 'peak-to-peak' value divided by 2.



Proposal for Power Excursion

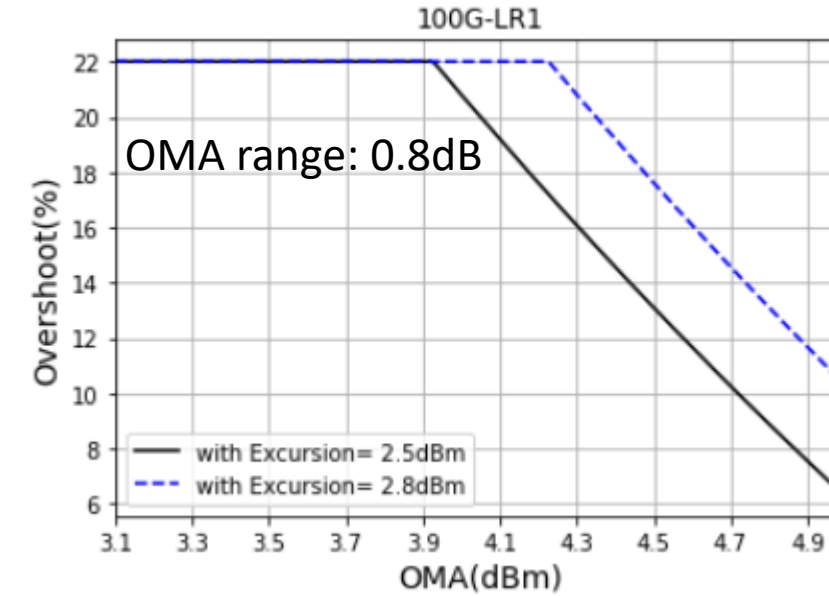
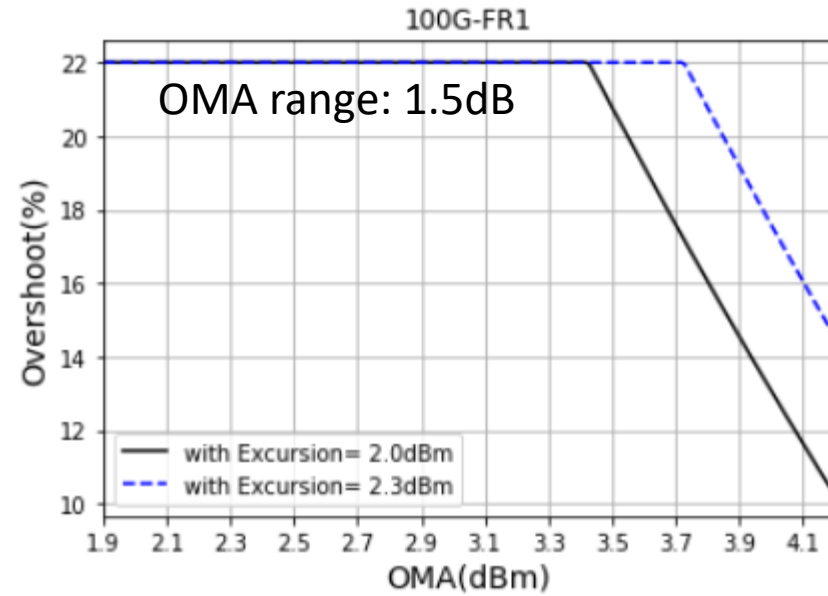
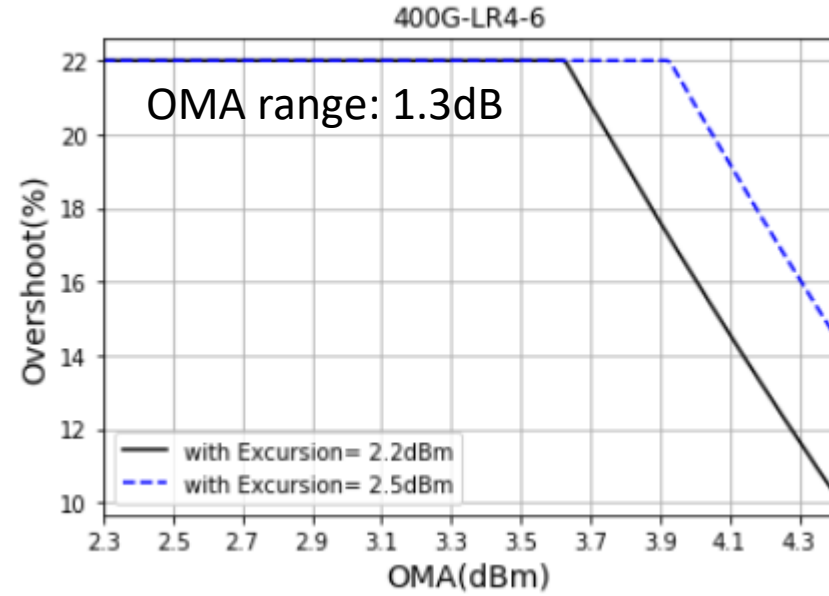
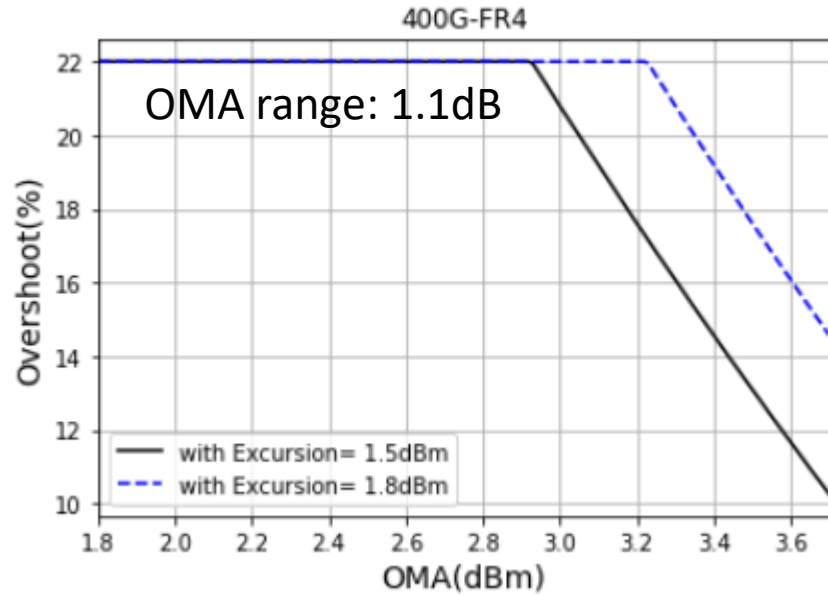
- ❑ Power excursion protects receivers from transmitters having, at the same time, maximum OMA and maximum overshoot
- ❑ With current Excursion spec of 1.5dBm, effective OMA range for maximum TDECQ and overshoot is only 1.1dB. This is very tight.
- ❑ Increasing power excursion spec to 1.8dBm would allow for 1.4dB OMA range
- ❑ Maximum allowed overshoot at max OMA would increase from ~10.5% to ~14.5%

400G-FR4 OMA vs Overshoot



Recommendation:

- ❑ Increase power excursion from 1.5dBm to 1.8dBm in 400G-FR4.



Recommendation:

- Increment power excursion by 0.3dB on FR4, LR4-6 and LR1
- No need to change FR1