

# **SCMR (signal to common mode ratio) for Channels**

Richard Mellitz, Samtec

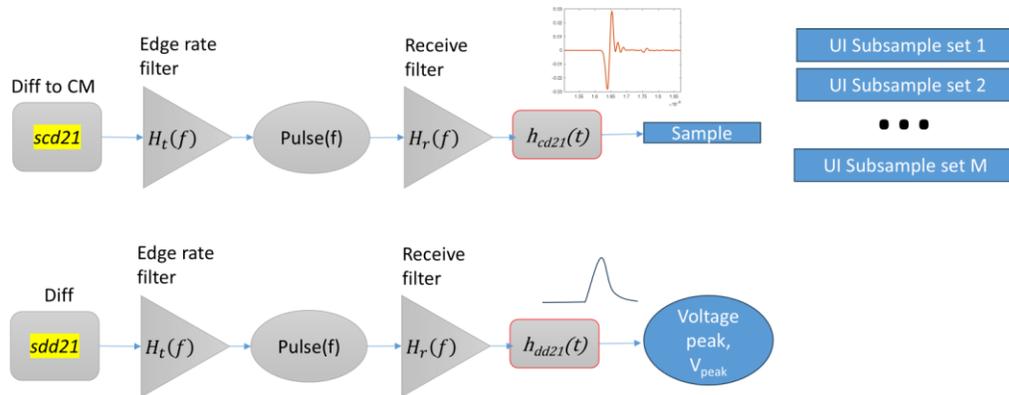
# Interoperability

- ❑ Skew is included in a common mode measurement as well as other imbalances.
- ❑ COM specifies a minimum differential performance
- ❑ S-parameters passed to COM can include the skew and other common mode effect. So, the effect of skew for a given channel is included in COM.
- ❑ However, whether that skew or common mode is interoperable with other components seems weakly specified
- ❑ SCMR for the channel can address that

# 2023 Presentation on Skew and SCMR

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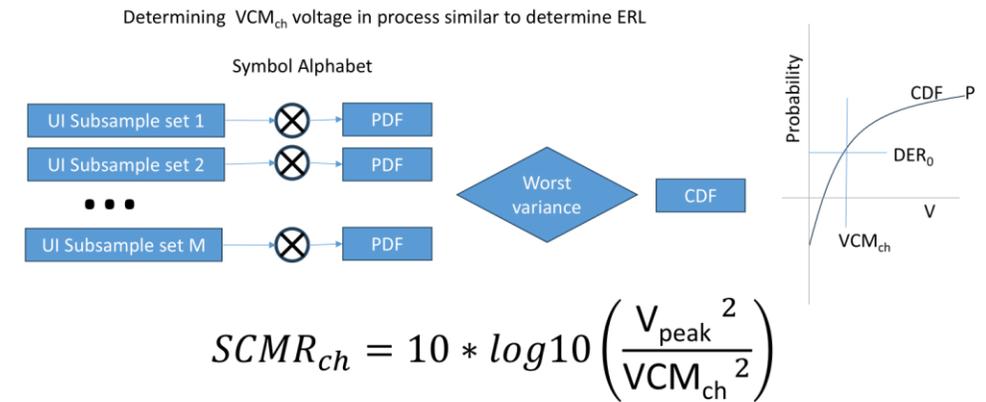
## SCMR Procedure for a Channel using pulse response from SCD21



IEEE 802.3 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces Task Force

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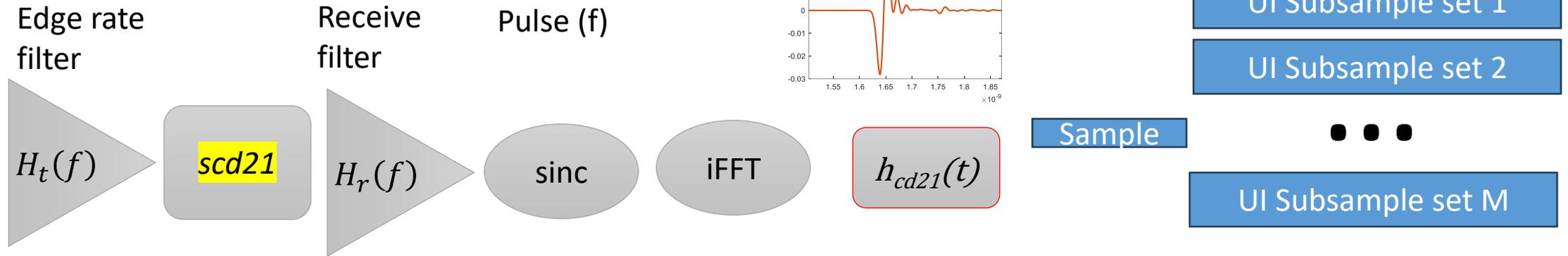
## Compute SCMR<sub>ch</sub>



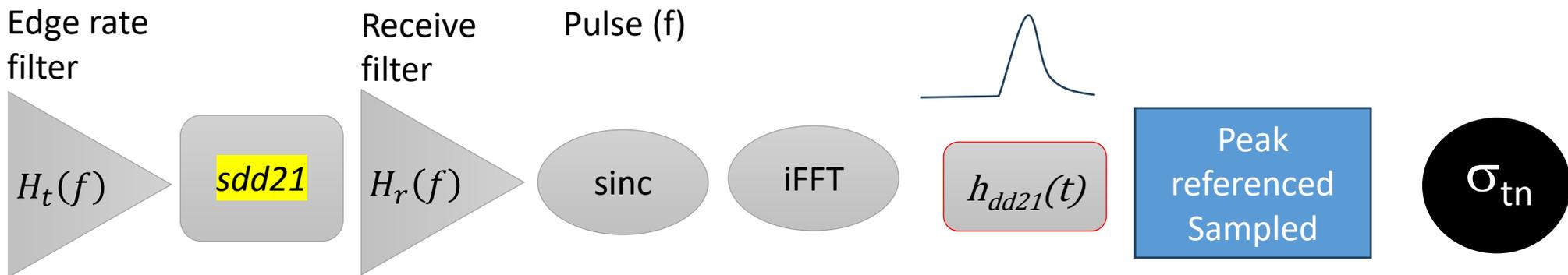
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# SCMR Procedure for a Channel using pulse response from SCD21

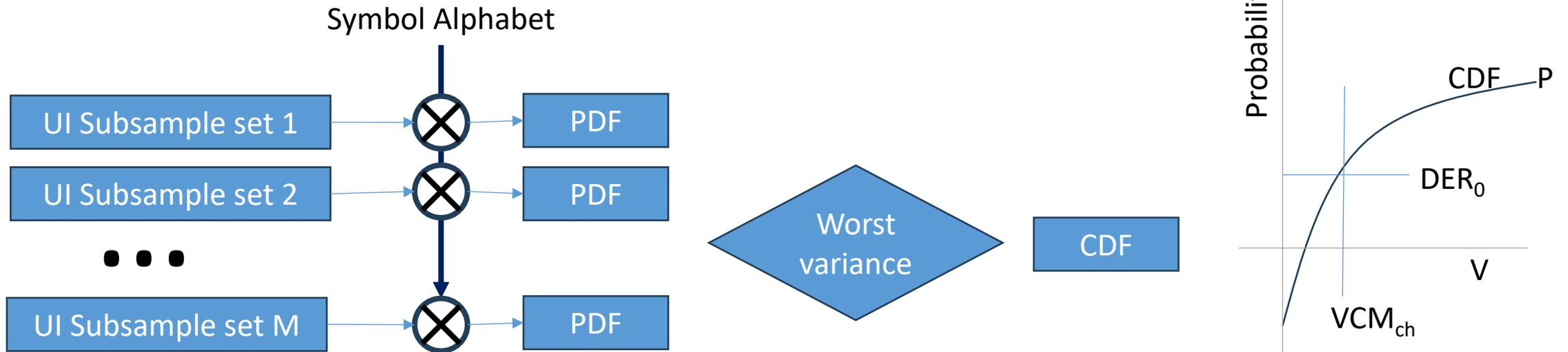


No\_package | PCB added



# Compute $SCMR_{ch}$

Determining  $VCM_{ch}$  voltage with method like when computing ERL



$$SCMR_{ch} = 10 * \log_{10} \left( \frac{\sigma_{tn}^2}{VCM_{ch}^2} \right)$$

# Thank You!